Hospital Topics

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SEPTEMBER 1961

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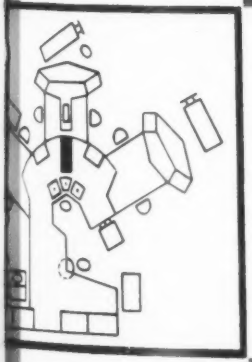
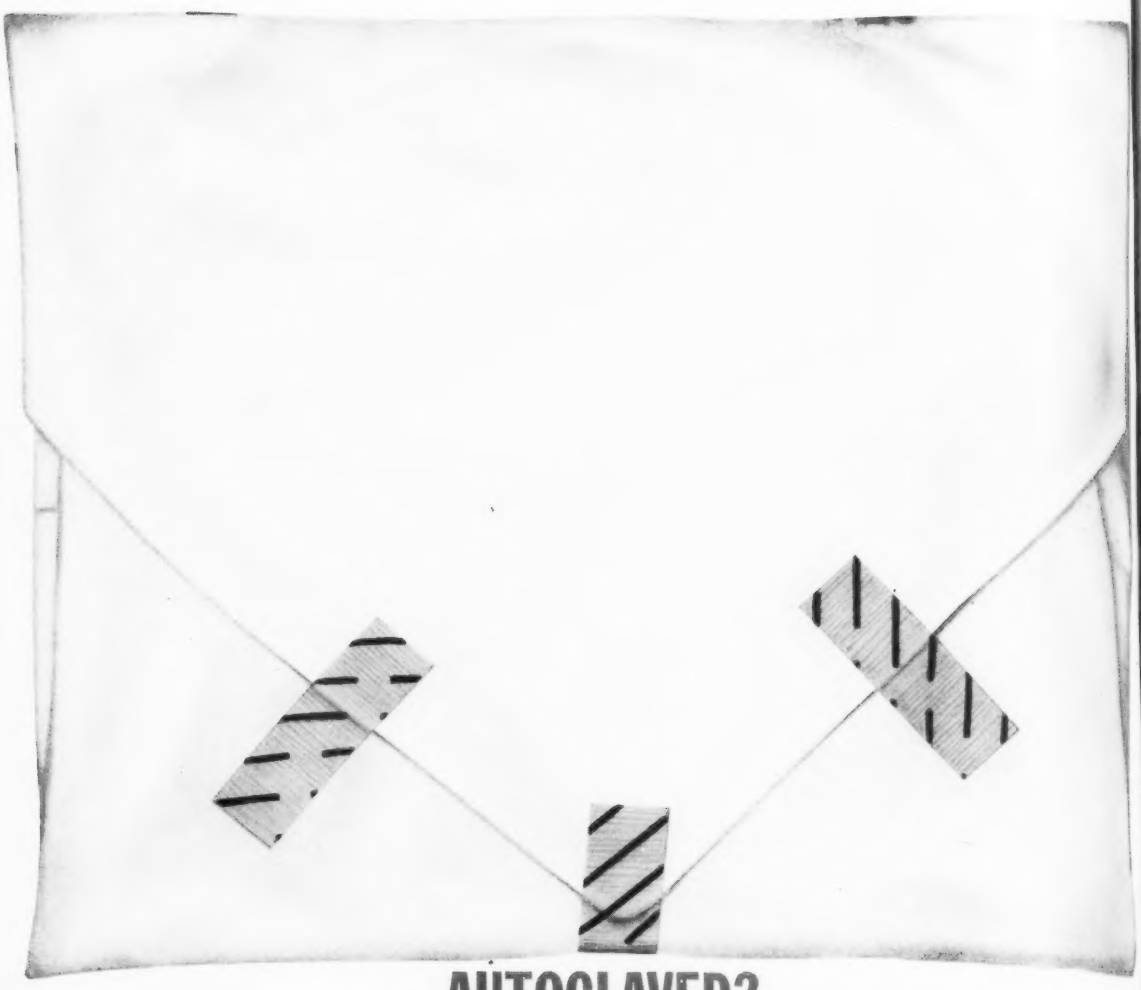
Selecting a Director of Nursing



CS: The Concept of Work Stations

Analyzing Play Thera



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SEPTEMBER, 1961, VOL. 39, No. 9

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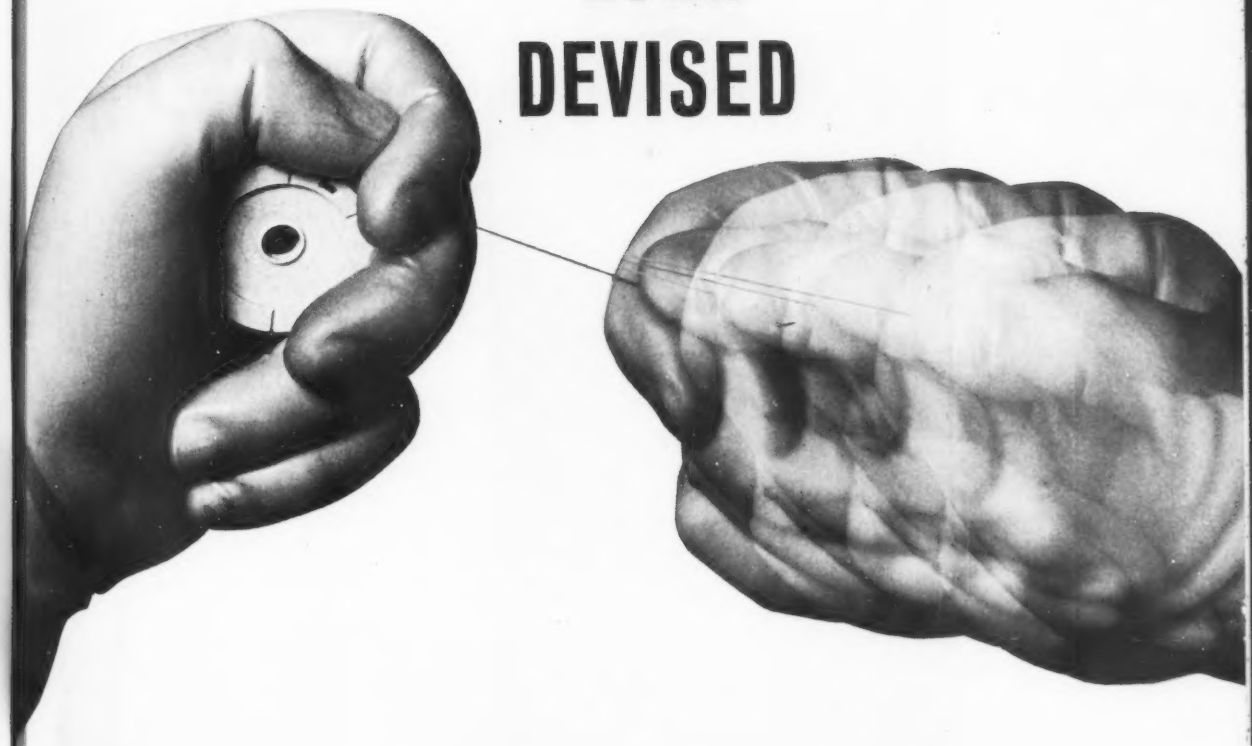

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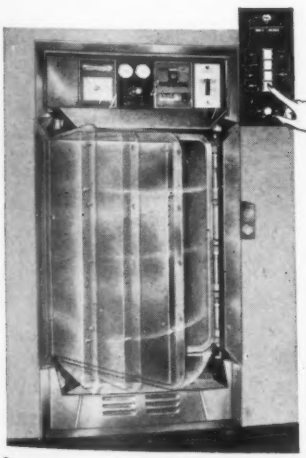

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THIS MONTH IN

HOSPITAL Topics

- "We all know it's here, we all have it . . ." says Dr. Edward Russell about the infections problem. Orange County, California approached its infection control problem as a professional one, and the county-wide program which resulted has a medical association committee as its coordinating group. Page 29.

- Beginning with a pertinent quote from Florence Nightingale, Florence McQuillan, R.N. explores the personal, technical, and administrative requirements which should be kept in mind when selecting a director of nursing. A wholesome and strong personality and the ability to lead are high up on the requirements list in the article on page 36.

- What's the purpose of a press conference? Does it accomplish its purpose as a publicity-and information-dispensing medium? Read this thought-provoking article about the "most visible examples of the PR man's art", by John H. Smith, Jr. Page 41.

- A stay in the hospital just isn't what it used to be for busy executives—at least not in New York City's Roosevelt Hospital "executive suite." This unique facility, which provides all the comforts of home while businessmen undergo their periodic health checkups, is the subject of the story on page 46.

- The traumatic effect of hospitalization upon the preschool child is a serious problem coming more and more into the psychologist's awareness. Relying on the knowledge that the child will repeat, in play, his unpleasant experiences, play interviews are a part of therapy at Children's Hospital, Pittsburgh. Page 63.

- The heartbreak of a mother when she discovers her child is mentally retarded is great, but the concern of the obstetrician is as great when he suspects that retardation is a result of prenatal or birth conditions. Prenatal and natal causes and their prevention are examined by Douglas P. Murphy, M.D., on page 69.

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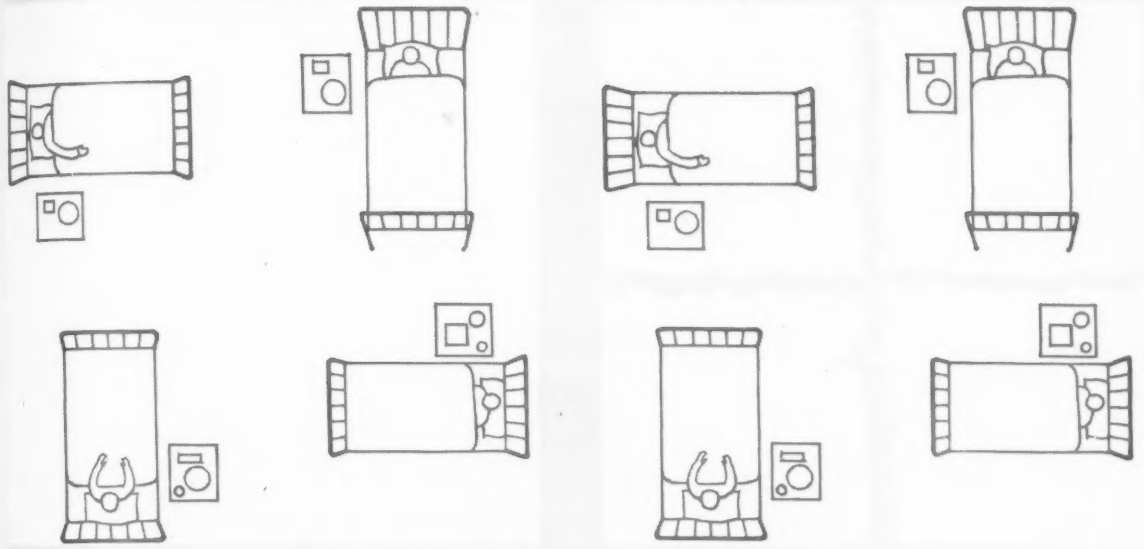
isolation **WITHOUT** separation



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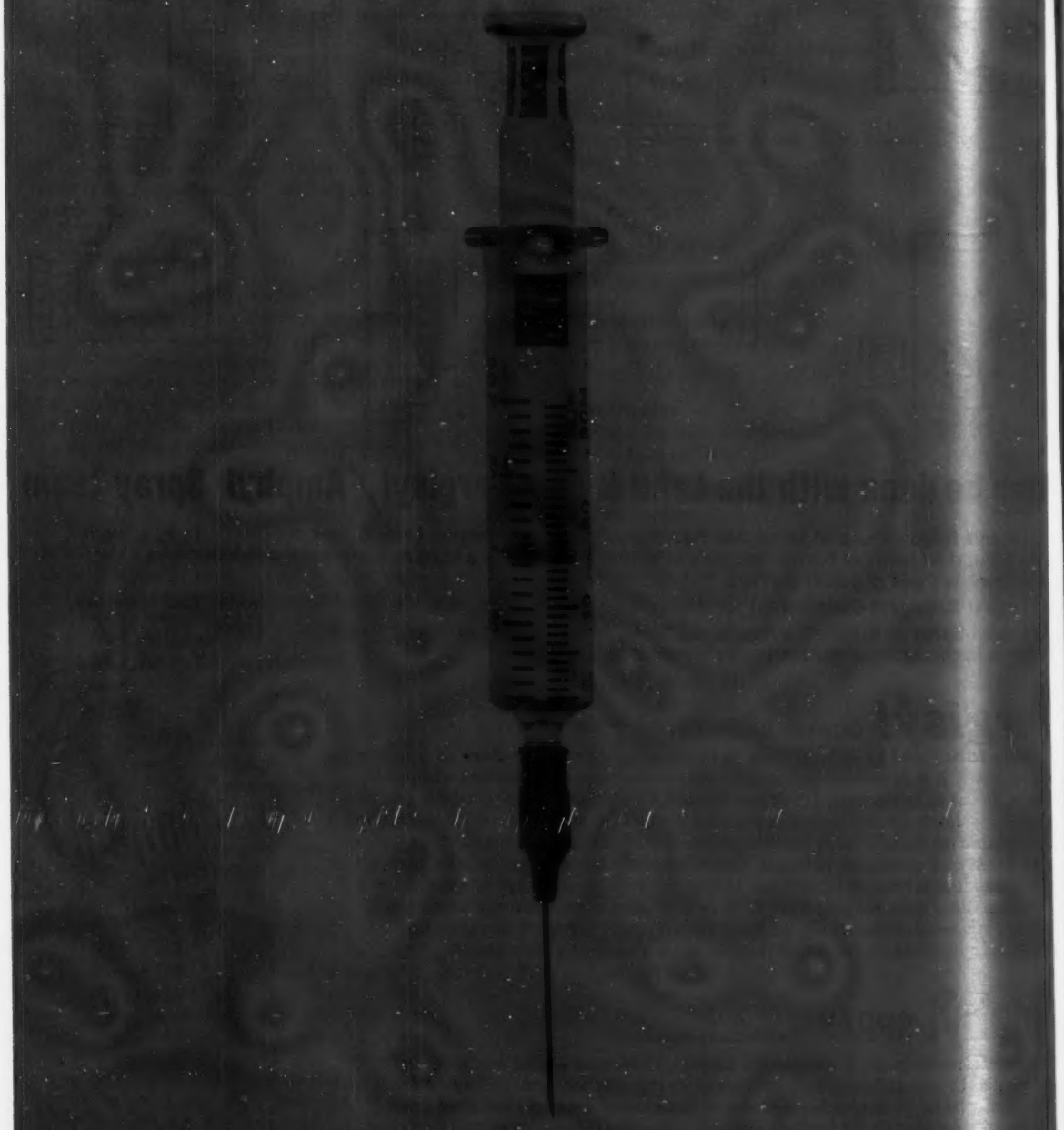

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References: 1. Sadove, M. S., and Wessinger, O. D.: J. Internat. Coll. Surgeons 34:573, Nov., 1960. 2. Erickson, J. C., III, and Hricko, M. J.: Guthrie Clin. Bull. 29:45, 1959. 3. Gordon, P. A.; Kerr, J. H., and Taylor, Russell: Canad. Anaesth. Soc. J. 7:290, July, 1960. 4. Sadove, M. S.: New Physician 9:38, Sept., 1960. 5. Young, J. A.: Anesth. & Analg. 39:451, Sept.-Oct., 1960.

*If desired, epinephrine may be used in infiltration anesthesia for hemostasis.

Winthrop Laboratories, New York 16, N. Y.

HOSPITAL Topics

VOL. 39, NO. 9
SEPTEMBER, 1961

Scanning the News

Patients Cheat On Medications

One patient in four doesn't take the right daily medication ordered by his doctor. Furthermore, as the number of his medications increase, the inaccuracies also increase; so much so that the person taking five or six prescribed medicines makes at least one error consistently.

Elizabeth B. Curtis, R. N., made the discoveries in a study of 26 home care patients in the New York Hospital-Cornell Medical Center comprehensive care and teaching program. In some cases, according to Miss Curtis, the errors resulted from the wrong dose being taken, the medicine not being taken at all, or a medicine taken that was self-prescribed by the patient (e.g. aspirin).

Best results in accuracy are obtained when the patient understands the purpose of his medications, sets a schedule for himself, and is queried on it by the visiting nurse.

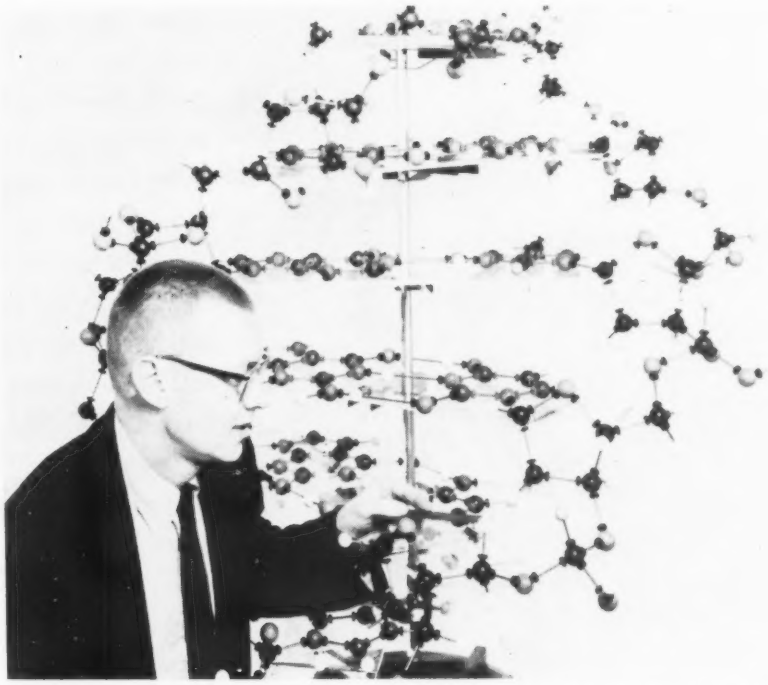
Got the Itch? It's An Air Condition

An itchy skin disease coming to the attention of doctors for the first time is being caused by our air-conditioned summer atmosphere.

According to Marvin E. Chernosky, M.D., a Houston dermatologist, the malady is similar to "winter itch", and is found chiefly on the arms and legs and the sides of the face and neck. The skin is dry and rough, and there are sometimes small scales, skin splits, and chapping.

The skin becomes dry and rough from the low humidity in air-conditioned environments, and from the frequent showers and baths taken by the patients. The patient soon becomes aware of the irritating effect of starched or rough clothing on his skin.

Therapy, says Dr. Chernosky, does not require the patient to leave his air-conditioner, but he is advised to avoid hot water and use little or no soap. An oil bath is soothing and helpful.



This scale model of the complicated structure of deoxyribonucleic acid (DNA) was on display at the recent meeting of the American Institute of Biological Sciences, held at Purdue University. The model, representing a small segment of an actual DNA chain of two attached spirals, measures nearly 4½ feet in height and contains about 1,000 atoms represented by neoprene balls with engineered fittings. If the entire DNA chain were represented in model form to the same scale, it would measure nearly three city blocks. Dr. Quentin Petersen, professor of chemistry, Wabash College, Crawfordsville, Ind., shown with his brainchild, built the original model. Central Scientific Co. built the model on display.

Add Sugar and Stir Well...

Two scientists at the Eastman Kodak company in Rochester, N.Y. have discovered that a pinch of sugar will improve x-ray film developer.

H. Murray Cleare and Nancy H. King report that sweetening photographic developer with common table sugar or with glucose extends the useful range of films for radiation recording.

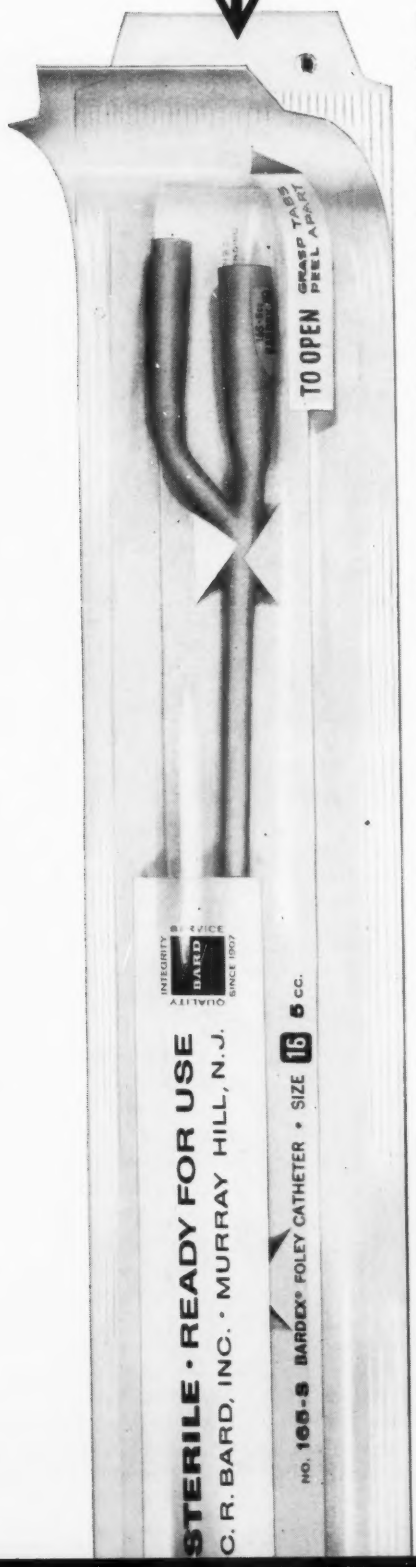
After film has absorbed a certain amount of radiation, it reaches a maximum density. Sweetening the developer extends the range of the film so higher levels can be read before top density is reached.

About seven ounces of glucose per quart of developer, or about the same proportion of sugar, is sufficient to extend the range of the various monitoring films.

We'd be interested in knowing what brown sugar can do with a film. (Sepia-tone x-rays?)

(Continued on page 92)

PEEL OPEN HERE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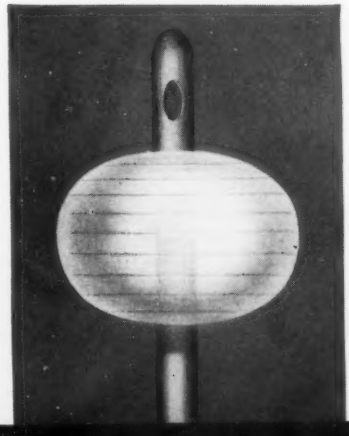

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News Briefs at Press Time

MORE INVESTIGATIONS AHEAD FOR DRUG INDUSTRY, COUNTY MEDICAL SOCIETIES

When Kefauver subcommittee hearings on the drug industry resume September 13, HEW Secretary Ribicoff will testify. Lee Loevinger, antitrust chief in Department of Justice, is scheduled to appear September 15.

A major question to be developed by the subcommittee is: "What constitutes research?" Kefauver and the Department of Justice, says TOPICS' Washington correspondent, will try to show that the drug industry's financing of clinical trials by physicians—trials which the physicians subsequently describe in articles in medical journals is expenditure for sales promotion, not for research. Kefauver staff has been querying the Treasury Department regarding possibility of establishing an upper limit on amount that could be charged as a tax-deductible expense for this purpose.

Both the Department of Justice and congressional committees are still eyeing hospital industries for possible price-fixing.

And—still on the subject of investigations—look for Congress and the administration to check into methods used by some county medical societies to suppress closed-panel medicine. Requests will soon be made for full transcripts of the much-publicized hearings of the Metcalf committee (New York State Joint Legistative Committee) on HIP in Staten Island, N.Y. Attempt will be made to use transcripts to embarrass Gov. Nelson Rockefeller, who vetoed bill that would have permitted nonprofit health plans (HIP and others) to use reserves to build hospitals if physicians in plans were discriminated against for membership on hosptal staffs.

Alleged restrictive devices used by some county medical societies may also be investigated—as part of overall harassment of organized medicine in retaliation for its opposition to administration's program for health care of the aged.

MICHIGAN RESEARCH TEAM SUBMITS FINAL REPORTS

Requirement of a state franchise for any construction of health-care facilities costing $25,000 or more was recommended by University of Michigan researchers in their final report on the three-year study of hospital and medical economics financed by Kellogg Foundation grants.

Other recommendations made by the group studying controls upon and within the voluntary health system included: establishing a Department of Medical and Hospital Facilities to administer the franchising and to coordinate licensing and development of all health care units on a statewide basis; establishing a single state licensing board for all health-care professionals; strengthening the staff and statutory powers of the state insurance commissioner; developing a voluntary service bureau for private voluntary insurance firms; selecting all trustees of Michigan Blue Cross and Blue Shield plans from highly qualified individuals outside the medical and health professions; and exploring the possibilities of merger of Blue Cross and Blue Shield.

The research team studying prepayment and insurance plans recommended legal curbs on extreme forms of experience rating and suggested that insurance companies consider pooling poor health risks. Competition from insurance firms using experience rating has left Blue Cross and Blue Shield with an increasing share of poor health-care risks, report noted.

Another report pointed out that tax dollars account for one-sixth the total expenditures on personal health care in Michigan. Among recommendations by researchers in this study were: inclusion of licensed nursing-home care in the state's program for medical aid to the aged; study of the possibility of integrating alcoholism clinics with mental health clinics; and support by the state of revision of the federal Hill-Burton appropriation to a single-sum payment, to be allocated among types of facilities according to priorities determined within the state.

Complete study findings will be published this fall by the Hospital Educational and Research Trust.

AMA SEEKS SUPPORT OF NEGRO DOCTORS AGAINST KING-ANDERSON

AMA president Leonard Larson, M.D., addressing the National Medical Association's convention, asked group to join AMA in opposing King-Anderson bill. Both retiring and incoming presidents of the Negro organization criticized this bill, but incoming president Vaughan C. Mason, M.D., also criticized Kerr-Mills Act, which AMA has strongly endorsed.

The association's House of Delegates adopted a compromise resolution which paid lip service to AMA doctrine that individual should provide for his own health care in old age, but asked states to stop dragging their feet on legislation to implement Kerr-Mills Act and demanded fair and equal distribution of aid in states which "historically discriminate undemocratically to the disadvantage of the Negro."

SHORT SHORTS

—Housing and Home Finance Agency soon will urge hospitals and other nonprofit agencies to sponsor special homes for the aged. Idea is well worth considering . . . . because of opportunity to provide a community service and at same time make a legitimate nontaxable, high-return investment.

—No standby laws and regulations have been prepared yet by federal officials for rationing and control of essential items. Present thinking of the administration is that the laws and regulations developed during Korean crisis would suffice if reactivated. Also, the Eisenhower administration prepared a whole set of controls after the U-2 incident.

—Former Rep. Aime J. Forand, now chairman of the National Council of Senior Citizens for Health Care Through Social Security, sent a letter in August to about 1,000 organizations to solicit their support. Though immediate goal of new group is passage of health-care legislation, Forand said in letter that it is hoped new organization "will eventually provide the framework for a nonpartisan progressive council representing the views of older persons on major issues."

Gordon W. Marshall

Calendar of Meetings

SEPTEMBER

5-15 ACHA Basic Institute, International House, Chicago

7- 8 Montana Hospital Association, East Glacier Hotel, East Glacier Park

10-15 American Surgical Trade Association, Shoreham Hotel, Washington, D. C.

11-15 AHA Institute, Central Service Administration, AHA Headquarters, Chicago

14-15 American Association of Hospital Accountants (Arizona Chap.), Cost Finding Implementation Workshop, Flagstaff

17-21 American Fracture Association, Shoreham Hotel, Washington.

23 American Association of Hospital Consultants, Shelburne Hotel, Atlantic City

23-25 American College of Hospital Administrators, Convention Hall, Atlantic City

24 ACHA Convocation Ceremony, Convention Hall, Atlantic City

24 ACHA Annual Banquet, Traymore Hotel, Atlantic City

24-29 American Society of Plastic and Reconstructive Surgery, Roosevelt Hotel, New Orleans

25-28 American Hospital Association, 63rd Annual Meeting, Convention Hall, Atlantic City

25-28 American Association of Nurse Anesthetists, Convention Hall, Atlantic City

26-29 American Roentgen Ray Society, Deauville Hotel, Miami Beach

27-29 American Association of Medical Clinics, Barbizon Plaza Hotel, Atlantic City

30-Oct. 8 American Society of Clinical Pathologists, Olympic Hotel, Seattle

OCTOBER

2- 4 AHA Institute, Hospital Laundry Management and Operation, Lord Baltimore Hotel, Baltimore

2- 5 American Academy of Pediatrics, Palmer House, Chicago

2- 6 American College of Surgeons, Clinical Congress, Conrad Hilton, Chicago

2- 6 American Nursing Home Association, Pick-Carter Hotel, Cleveland

3 American Association of Poison Control Centers, Palmer House, Chicago

5- 6 Saskatchewan Hospital Association, Hotel Saskatchewan, Regina

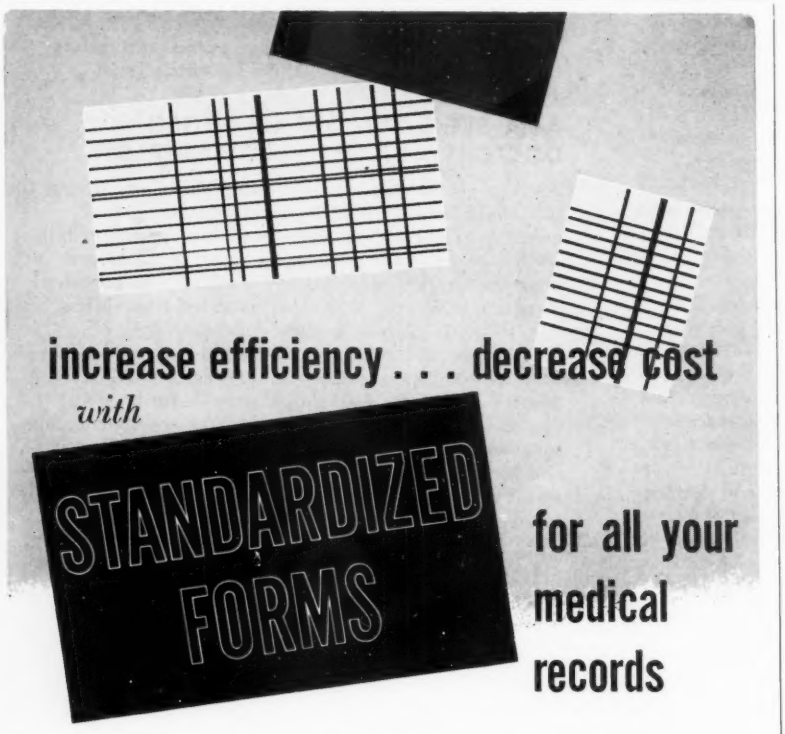
8-13 American Academy of Ophthalmology and Otolaryngology, Palmer House, Chicago

9-12 American Association of Medical Record Librarians, Benjamin Franklin Hotel, Philadelphia

9-13 AHA Institute, Nursing Service Administration, AHA Headquarters, Chicago

10 Hospital Association of Rhode Is-

(*Continued on page 14*)



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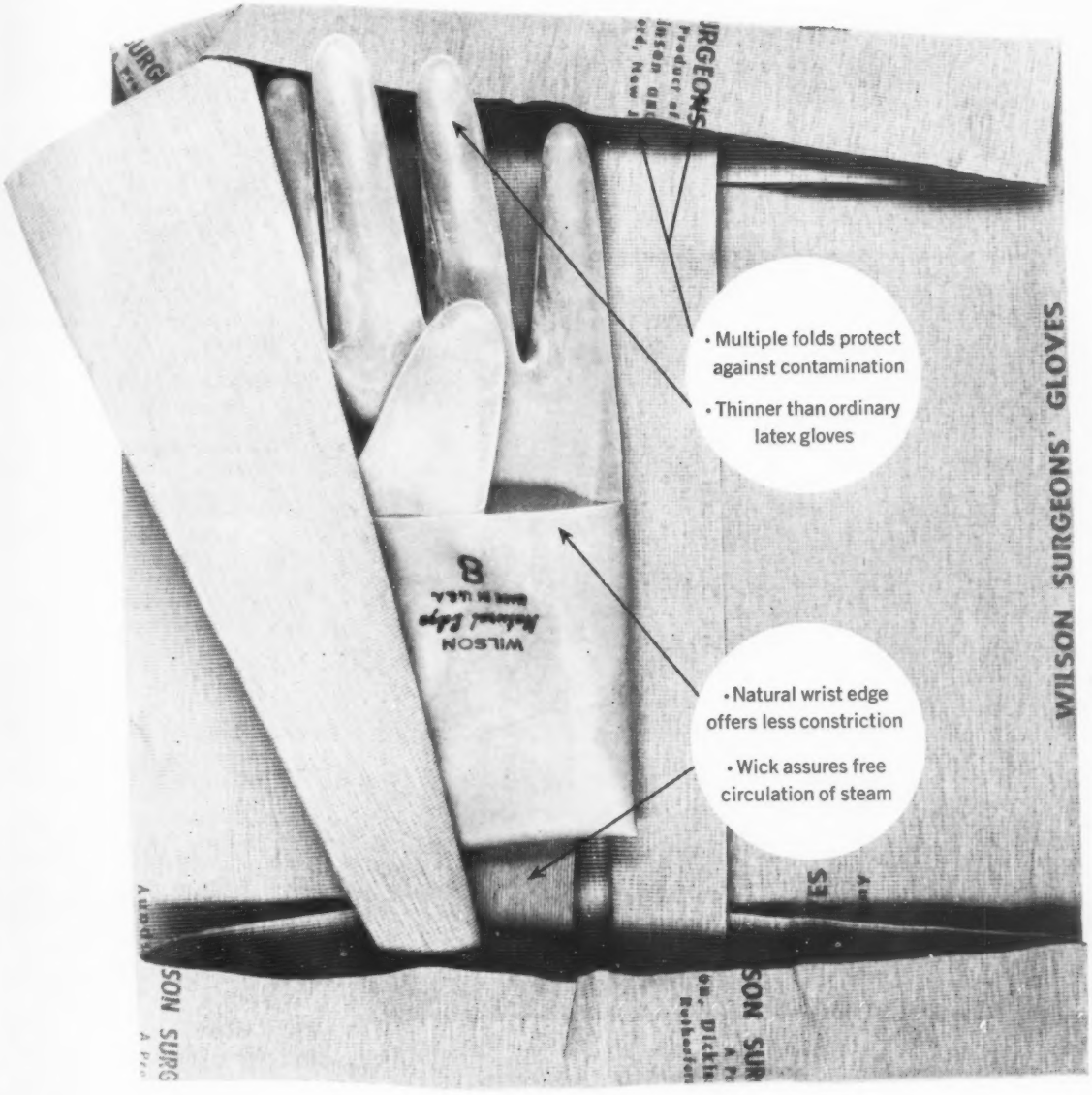
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CALENDAR OF MEETINGS

(*Continued from page 12*)

land, Sheraton Biltmore Hotel, Providence

10-12 Associated Hospitals of Alberta, Hotel Palliser, Calgary

11-12 American College of Obstetric & Gynecology, Conference on obstetrical, gynecologic and neonatal nursing, Penn-Sheraton Hotel, Pittsburgh

11-12 Vermont Hospital Association, Vermont Hotel, Burlington

11-13 AHA Institute, Hospital Safety and Insurance, Adolphus Hotel, Dallas

11-13 Missouri Hospital Association, Sheraton-Jefferson Hotel, St. Louis

12 Association of Delaware Hospitals, Dover

12-13 Nebraska Hospital Association, Cornhusker Hotel, Lincoln

16-17 Idaho Hospital Association, Elks Lodge, Boise

16-17 National Council on the Aging, New York City

16-18 AHA Institute, Management Development, AHA Headquarters, Chicago

16-19 AHA Institute, Staffing Department of Nursing, Sheraton Hotel, Philadelphia

16-19 American Dental Association, Sheraton Hotel and Convention Hall, Philadelphia

16-19 13th Mental Hospitals Institute, Sheraton-Fontenelle Hotel, Omaha

17-18 South Dakota Hospital Association, Sheraton-Cataract Hotel, Sioux Falls

17-19 British Columbia Hospital Association, Hotel Vancouver, Vancouver

19-20 Arizona Hospital Association, Ramada Inn, Phoenix

19-21 West Virginia Hospital Association, Morgan Hotel, Morgantown

20-21 Association of Operating Room Nurses, Regional Institute, Shamrock-Hilton, Houston

20-24 American Heart Association, Bal Harbour, Miami Beach

22-24 Oregon Hospital Association, Eugene Hotel, Eugene

22-25 American College of Gastroenterology, Hotel Cleveland, Cleveland

22-25 Colorado Hospital Association, Harvest House, Boulder

22-27 American Society of Anesthesiologists, Statler Hilton Hotel, Los Angeles

23-25 Ontario Hospital Association, Royal York Hotel, Toronto.

23-24 American Cancer Society, Biltmore Hotel, New York City

23-27 California Hospital Association, El Cortez Hotel, San Diego

24-27 American Dietetic Association, Sheraton-Jefferson Hotel, St. Louis

25-28 American Association of Blood Banks, Drake Hotel, Chicago

26-27 Washington State Hospital Association, Chinook Hotel, Yakima

26-27 American College of Obstetrics & Gynecology, Conference on obstetrical, gynecologic and neo-natal nursing, Pick-Congress Hotel, Chicago

(*Continued on page 16*)

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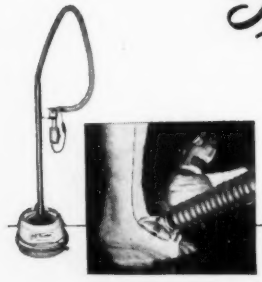

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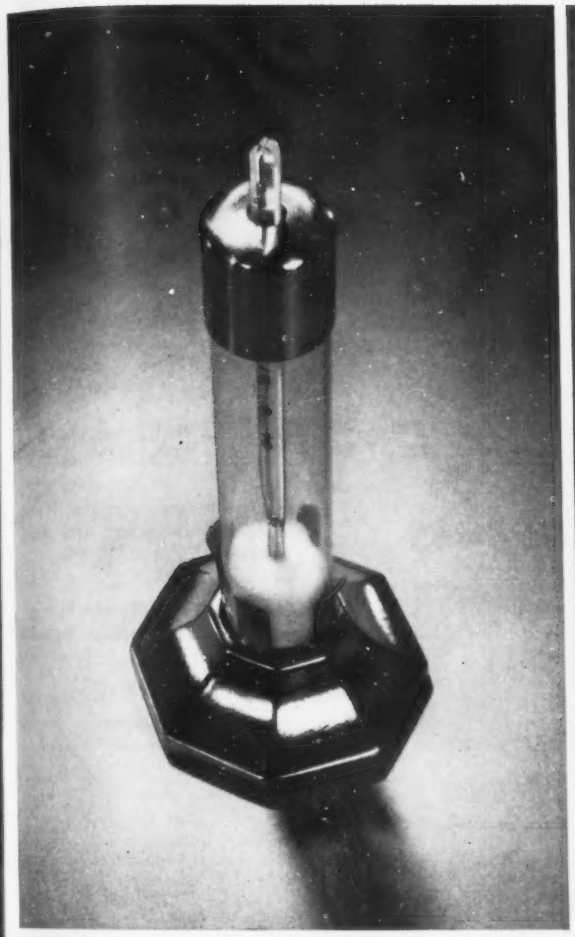

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CALENDAR OF MEETINGS

(Continued from page 14)

NOVEMBER

1- 3 Indiana Hospital Association, French Lick Hotel, French Lick

2- 3 Oklahoma Hospital Association, Mayo Hotel, Tulsa

2- 4 AHA Institute, Hospital Directors of Medical Education, AHA Headquarters, Chicago

5- 8 Association of Military Surgeons, Mayflower Hotel, Washington, D.C.

5-11 American Occupational Therapy Association, Detroit

6-10 AHA Institute, Physical Therapists, Deauville Hotel, Miami Beach

6-10 AHA Institute, Hospital Pharmacy (Specialized), AHA Headquarters, Chicago

8-10 Maryland-D.C.-Delaware Hospital Association, Shoreham Hotel, Washington, D.C.

9-10 Kansas Hospital Association, Baker Hotel, Hutchinson

9-10 Minnesota Hospital Association, Leamington Hotel, Minneapolis

9-10 Virginia Hospital Association, John Marshall Hotel, Richmond

9-11 American Academy for Cerebral Palsy, Chase and Park Plaza Hotels, St. Louis

13-15 Association of American Medical Colleges, Queen Elizabeth Hotel, Montreal, Quebec

13-17 American Public Health Association, Cobo Hall, Detroit

13-17 AHA Institute, Hospital Housekeeping (Advanced), AHA Headquarters, Chicago

13-17 AHA Institute, Dietary Department Administration, Somerset Hotel, Boston

14-16 AHA Institute, Directors of Hospital Volunteers (Basic), Cosmopolitan Hotel, Denver

16-18 American College of Obstetrics & Gynecology, Conference on obstetrical, gynecologic and neo-natal nursing, Kentucky Hotel, Louisville

17-21 National Society for Crippled Children and Adults, Denver-Hilton Hotel, Denver,

25-27 American College of Chest Physicians, Brown-Palace Hotel, Denver

26-Dec. 1 Radiological Society of North America, Palmer House, Chicago

27-30 AHA Institute, Operating Room Administration (Advanced), Sheraton-Lincoln Hotel, Indianapolis

27-30 American Medical Association, Clinical Meeting, Denver

28-30 AHA Institute, Hospital Dental Service (Advanced), AHA Headquarters, Chicago

30-Dec. 1 Illinois Hospital Association, St. Nicholas Hotel, Springfield

DECEMBER

2- 7 American Academy of Dermatology and Syphilology, Palmer House, Chicago

11-15 AHA Institute, Hospital Design and Construction, Statler-Hilton, Los Angeles

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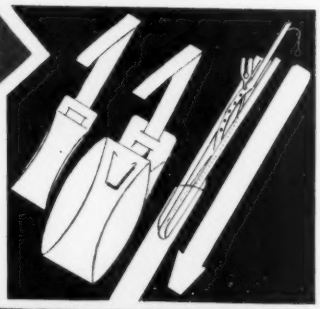

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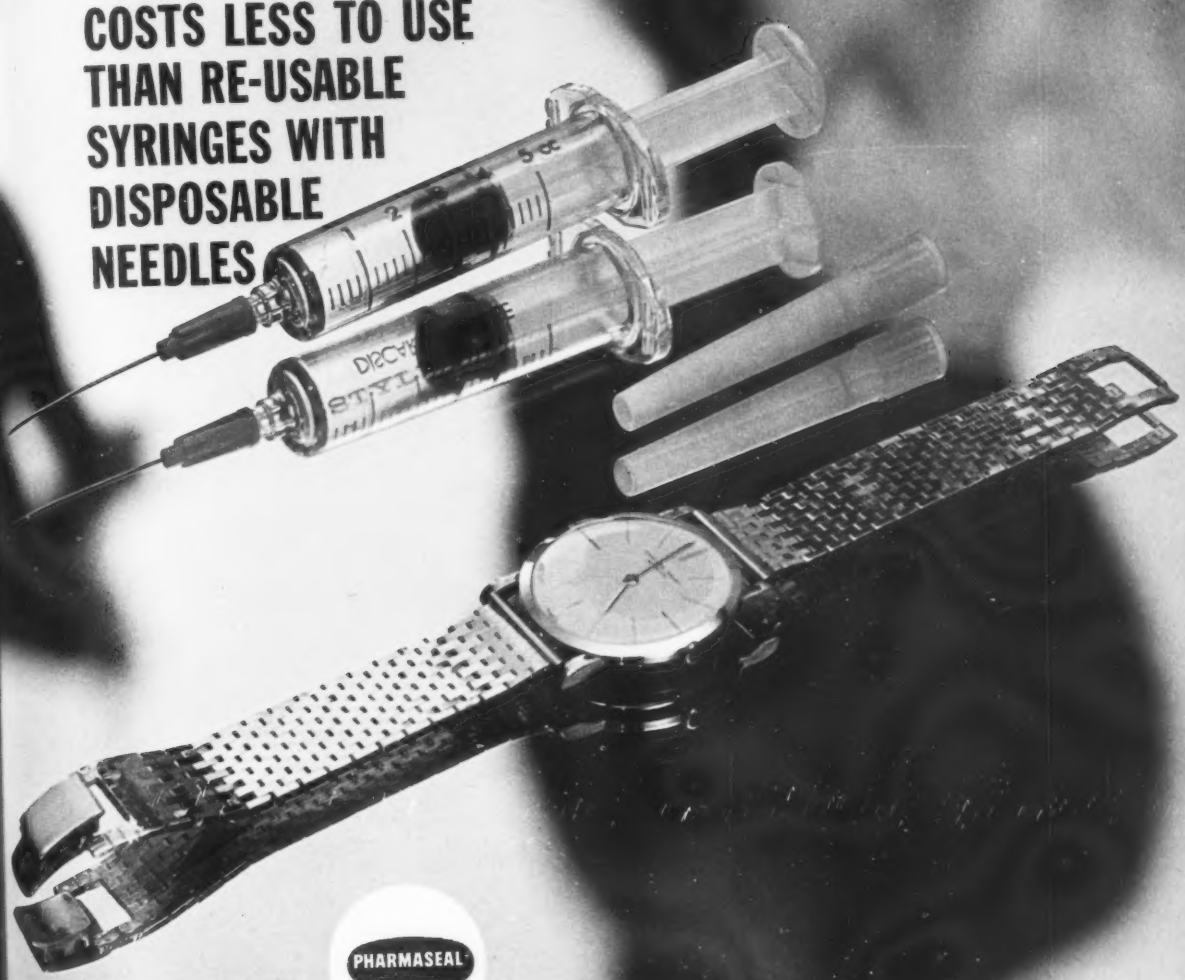

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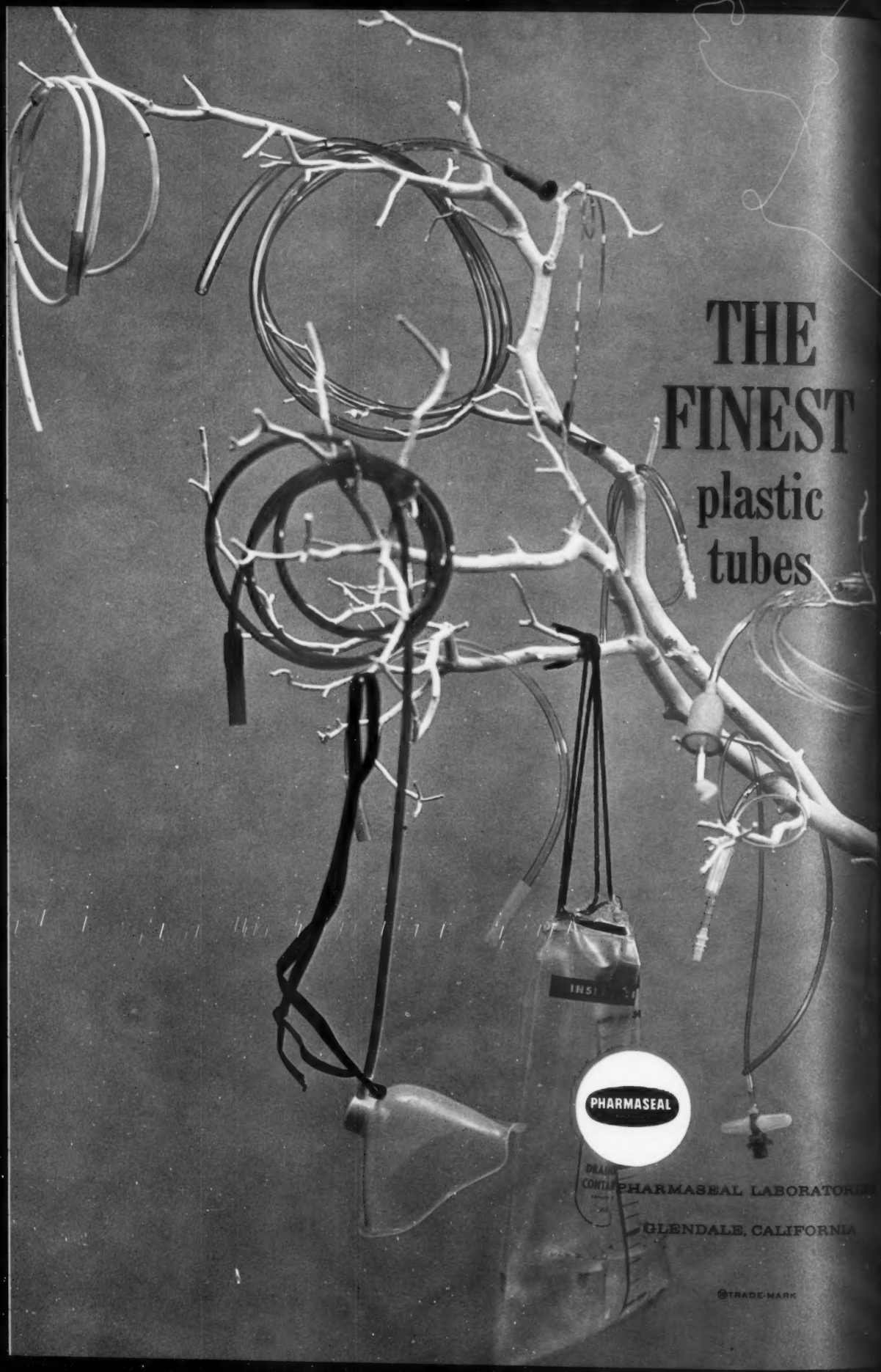
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HOSPITAL Digest SECTION

A Lawyer Evaluates the Medical Record

By William Andrew Regan, L.L.B.*

Condensed from Journal of the American Association of Medical Record Librarians, *April 1961*

The primary purpose of the hospital medical record is to provide written documentation of the patient's illness. In addition, the good record also gives written evidence of the nature and quality of care and treatment rendered to the patient. A large percentage of litigation involving hospitals, physicians, and nurses ultimately turns on such documentary evidence in the medical record.

We have found that what is basic in a patient's record makes for good medicine as well as good law. The patient's admission history, record of physical examination and diagnosis, physician's orders, progress notes, nurses' notes, laboratory reports, prognosis, and discharge summary constitute the essential material. In many cases the anesthesia report, radiology report, and consultation report may also be added.

When a medical record is brought to court, these categories of medical information are usually the pertinent parts of the record for litigation. From a purely legal evaluation of material in the record, anything additional would seem to be superfluous. While other data, such as social service notes, third-party insurance carrier claim forms, and correspondence to the medical record department from law offices and insurance companies, may be channeled to the patient's record to provide against the possibility of misplacement or loss, it is precisely the presence of some of this material which has clouded litigation in many cases and has resulted in misrepresentations of fact detrimental to the interests of the hospital defendant.

Ownership of Record. In a detailed legal analysis of the property rights in the patient's chart or medical record, we have found that the physical ownership vests in the hospital corporation. That is, the patient does not purchase a medical record when he pays his bill for hospital services. Further, ultimate control of the medical record rests in the hospital corporation, for such control seems to be predicated on ownership.

However, the patient's right of privacy must be respected and protected in the control that the hospital exercises over the medical record. Recognizing this duty, it is almost universally found that hospitals require the written authorization of a patient prior to the release of the medical record to a person or persons other than the patient's attending physician or consulting physician.

Two exceptions to this arise with reference to court orders and statutory obligations. There is a steady flow of medical abstracts and patients' records from the hospitals to nongovernmental third-party agencies. It is quite understandable that insurance carriers should require a medical abstract prior to the payment of a claim. The volume of such transmittal of records must not, however, be allowed to cloud the fact that every request made to the medical record department in any hospital from a third-party insurance carrier must contain an authorization for the release of such information, dated and signed by the patient and properly attested to.

The right which the patient has to authorize the release of medical record information is abrogated by statutes enacted in the interest of certain agencies of the federal and state governments. Likewise, a recent series of legal decisions has demonstrated quite clearly that agents of the federal government are entitled to obtain certain vital statistics regarding patients whom they know to be confined in particular hospitals.

However, courts have been unanimous in recognizing the obligation of the hospital corporation to limit federal inspection to that portion of the record which contains vital statistics.

State statutes, too, sometimes confer upon interested parties to

(Continued on next page)

*Hospital legal consultant, Providence, R.I.

litigation a right to inspect medical records in hospitals. The hospital lien laws in some states confer upon litigants and insurance carriers the right to inspect pertinent medical records at reasonable times. In a similar manner, the medical payment plans of certain workmen's compensation acts give to the employer and/or insurance carrier the privilege of examining pertinent medical records.

Preservation of Records. There are several reasons for preserving the medical record beyond the point of a patient's discharge from the hospital. First, the record lends itself readily to medical and nursing teaching programs in the hospital and serves as a valuable adjunct to other professional education devices.

Secondly, the record is preserved for the purpose of any further care and treatment which the patient may need or any further illness which may require the retrospection and study of such records compiled during an earlier illness.

Thirdly, the record is a written testimony of the caliber of care and treatment which was rendered to the patient by his physician and by the hospital and its personnel during his illness and confinement. It therefore becomes valuable legal evidence attesting to the nature of the patient's illness and the quality of care and treatment. Many a lawsuit directed against a hospital or against a physician has been resolved in the interest of the hospital or physician on the strength of a good medical record.

To make adequate allowance for the longest period of statutes of limitation, we suggest that the record be kept for 25 years.

Many hospitals have found it expedient to arrange for the microfilming of medical records. There is no question that this procedure will solve many of the problems of storage and bulk, and apparently the procedure has been accepted by physicians who have occasion to use the microfilm records in research and study.

With microfilm, the laws governing the admissibility of photographs will generally apply for the qualification of the record. While the procedure for the examination of such records in court is rather cumbersome, it does not destroy the value of the medical record as legal evidence.

Reasonable Care. The *subpoena duces tecum* is a document issuing out of a court of competent jurisdiction ordering the production and delivery of records. In its application to hospital medical records, it is usually an order of the court directing an officer of the hospital corporation or some authorized person within the hospital to deliver to the court a particular medical record.

It is sometimes asked what action the court would take in the event the hospital had failed to preserve a medical record and was not able to produce the same in compliance with a *subpoena duces tecum.*

We know of no instance in which any civil liability or criminal sanction has been visited upon a hospital for failing to produce medical records which have been destroyed in the ordinary course of hospital business. If, as a matter of routine procedure, medical records are destroyed at certain periodic times in a formulated and predetermined manner, commensurate with the postulates of good patient care, there certainly can be no inference that the medical record was destroyed with the intent of withholding evidence from the court.

And the court would listen with reasonable forbearance to an explanation from a medical record librarian regarding the accidental destruction of a medical record. The hospital is held to no greater custodial duty than that of reasonable care.

What One Hospital Tells Its Patients About Hospital Costs

Condensed from "To Our Patients . . ." *a pamphlet given by (Providence) Rhode Island Hospital to its patients*

Here at Rhode Island Hospital, and at other similar hospitals, the daily rate for a single room is about twice what you would expect to pay at a good city hotel. And on top of this, you find various special charges. No matter how short your stay, the bill always adds up to a total that seems too big.

What possible justification can there be for this?

There are, actually, many sound reasons for hospitals constantly increasing their rates. Perhaps the biggest reason—and the hardest to lick—is this:

Everybody knows that scientific medicine is progressing by leaps and bounds. But everybody *doesn't* know that almost every time medicine takes a step forward the hospital has to hire more people.

Perhaps a test is discovered for diagnosing an illness. If it is a brand new test where no test at all existed before, it means added work. For a while the regular staff can handle it, but as more and more additions occur (and they do) eventually we have to increase the number of people on duty to perform these tests.

The same is true as more complicated surgery becomes possible.

In industry very often technical progress means at least a saving in the manpower required for a job. But in hospitals, as science advances it takes more people to treat one patient—or to do the behind-the-scenes work on which the treatment depends.

In many areas, of course—such as laundry, kitchen, accounting—modern labor-saving methods can be, and are, introduced to effect great economies. But short-cuts

and automation do not work so effectively in bringing medical care to the bedside.

Hotels and Hospitals

Comparing hospitals with hotels —which nobody ever does except when the conversation gets around to bills—let's consider some differences.

TEST QUESTION: *A hospital hires*
☐ *more*
☐ *less*
☐ *just as many*
people to care for a patient as a hotel hires to care for a guest. (The answer is starred in the last paragraph.)

The hospital provides room service for every meal. If necessary, the hospital spoon-feeds the patient. The hotel?

Hospital beds must be made by people trained to make the bed with the patient in it. Hotel guests might be surprised if this ever happened to them. And hotel employees need not be trained to do this.

Bedpans are not the most satisfactory things from the patients' viewpoint (or the hospitals'), but the hospital must provide a staff adequate to give this service. No hotel includes this in the duties required of its employees.

Temperature, pulse, and respiration must be taken—and recorded—at regular intervals. Backs must be rubbed, baths given, faces washed, pillows adjusted; people must be helped in and out of bed, given support while walking. Water pitchers must be kept filled (without the need for tipping a bellboy); orders for medicine must be written down, medicines brought to the patient, a record made of the fact. All these actions require people on a hospital staff who need never be employed by a hotel.

There are endless examples of the differences—because a hospital and a hotel are not trying to do at all the same kind of job—but perhaps the above is enough to suggest some of the reasons why a hospital has to employ about *four times as many** people to care for one patient as a hotel needs to care for one healthy guest.

THE WORK ADDICT

By Nelson Bradley, M.D.*

Condensed from Sales Management, *July 7, 1961*

Society's unquestioned acceptance of the work-addicted executive is, to the psychiatrist, frightening: the drug, alcohol, and gambling addicts are universally deplored. But the work addict is roundly applauded for his achievement. And the price he and his family must pay is very, very high.

There is little doubt that this new type of addict exists. He is just as self-destroying, just as damaging to the family relationship as the neurotic, alcoholic, or gambling addict. The work addict's only edge on the other types is time—it takes longer for his to develop—and the fact that he is usually an executive.

Addiction is a nasty word. It suggests a surrender of will power, an admission of inadequacy, a frightening weakness: an unhappy picture of despondency, degradation, and failure. But excessive behavior of practically any kind begets addiction; and today we have a 20th century phenomenon —the work addict.

How can we distinguish between an honest day's work and true addiction? In the case of the executive and his workload, anything over a 40-hour work week is excessive behavior, particularly in this day of good corporate organization and extremely competent subordinates.

You may ask about someone such as the grocery man who works 70 hours a week. This certainly appears to be excessive, but it isn't at all. This man must work such hours in order to run his business. He has no choice. So his behavior is logical, as opposed to the executive who drives himself far past the normal limits his job should demand.

Take the grocer. He often finds he has little business before 10 A.M. Accordingly, he opens at that hour. If he is a work addict, he'll open at 7:30 A.M. every day, regardless of what he knows to be the traffic patterns in his store.

Ask an apparently work-addicted executive about his excessive hours and he will always find a reason for them. "These reports must be evaluated; a decision must be reached tonight." Trace the replies back, and with surprising frequency you will discover that the events leading to rush have actually been instigated by the man himself.

With the addict, you're liable to hear such phrases as, "Haven't had a vacation in four years;" or, "I'd love to get away for a week but there isn't a chance with the new control systems . . ."

(Continued on next page)

*Chief, psychiatric studies, Lutheran General Hospital, Park Ridge, Ill.

Often such replies are little more than stock heroics. So many executives believe (or want to believe that the company could not possibly function without them.

Generally, this is a fiction. The executive, subconsciously at least, knows it—and this in turn feeds the addictive pathology. What such a delusion boils down to is the need for rationalization on the part of the addicted executive. The rationalization satisfies him and feeds his conscious desire to be admired.

The addict can create others like him, or attempt to. He often encourages his subordinates to work according to his own addictive pathology. This is precisely like the alcoholic who is insulted if you refuse to have a drink with him.

Even though dedication-to-job is extolled in our culture, there are signs that this rush-to-the-grave (for such it can be) is wearing thin, particularly with the addict's wife. She often fails to see the percentage of such frantic behavior. Premature widowhood or life with a distraught husband holds little attraction for the healthy woman.

There are recognizable symptoms that characterize the work addict:

—The thought of a three-day weekend causes him uneasiness. His subconscious knows that he will be cut off from the driving involvement of daily work.

—An impending vacation magnifies his symptoms because of an even longer hiatus.

—On weekend evenings, the work addict shows characteristic withdrawal symptoms — restlessness, irritability, nervousness, preoccupation, and even a measure of irrational behavior.

Like the true drug or alcohol addict, whose tolerance of the barbiturate or alcohol is extremely high, the work addict is (physically, at least) able to stand the terrific pace. These people seem to disregard the ordinary fatigues of life. Beneath the surface, however, the damage is building.

The work addict never stops substituting activities as a cover-up for hidden hostilities. Or inadequacies. But the substitution technic is generally only relatively successful.

The first *corrective* step the addicted executive can take is a frank, unreserved admission of his excessive behavior. Admission breaks down certain barriers to recovery. It is vitally necessary.

Then he must seriously question the feelings that are spurring him to repeated excessive behavior. He must isolate these feelings. He can explore such things as his work status, social status, and his adequacy as a husband and father. He must look deeply into every possible cause leading to his effort to substitute violent activity for inner turmoil.

Ultimately, the real answer is a whole new philsophy of life. The problem the work addict faces here is that—unlike other addicts —he suffers no social stigma; in fact, the very opposite. He is under no clear-cut pressure to seek his change in philosophy except, perhaps, from a distracted family and fear of premature death. And, unfortunately, this is perhaps what is facing the work addict; the majority, at least in the near future, will probably continue their reckless journey through an unhappy existence, at best, to an early death **at worst.**

Insurance for Private Psychiatric Care:

the first year of a two-year experimental program

By Arthur H. Harlow, Jr.*

Condensed from American Journal of Public Reports, *May 1961*

Increasing emphasis is being placed on the value of psychiatric treatments. There have recently been important forward strides in the effectiveness of short-term therapy. The time has come, therefore, to face up to the challenging question which confronts all insurance plans today: are private short-term psychiatric treatments in the office as well as in the hospital insurable?

Over the years there has been much discussion as to how, if at all, psychiatric services could be insured. In fact, the more interested one becomes, the more questions multiply. How do you define a psychiatric condition? A psychiatric service? What type of services would you cover? Rendered by whom? Where? How would you limit your liability?

Since there is very little information available on this subject, we at Group Health Insurance felt that the only way to cope with this endless flow of questions was to try an actual experiment.

In designing the project, we decided, first, to limit the number of services to be paid for (15 individual office visits and 30 days in the hospital). We further decided that the patient should pay a part of the cost ($5 out of the $20 individual office visit fee). We are paying only for services rendered by psychiatrists who are members of the American Psychiatric As-

*President, Group Health Insurance, Inc., New York City.

sociation and who agree to participate in our program.

Both the APA and the National Association for Mental Health are sponsoring the program. A grant from the National Institute of Mental Health is meeting two-thirds of the cost. GHI's one-third is coming from surplus—no additional premium is being charged eligible subscribers.

Benefits were offered to a sample of 76,000 persons, composed of 30,000 GHI subscribers and their 46,000 insured dependents, all of whom are covered under GHI's comprehensive family-doctor plan. Although the group is not typical of the whole population of New York, this sample may be representative of people enrolled in a comprehensive insurance plan as members of employed groups.

Three mailings brought answers from 70 percent. The other 30 percent were sampled by telephone and personal interviews.

After one year of the two-year project, certain data have been collected. The table below compares the entire eligible population with those who sought service as to demographic and other factors. Note the differences in utilization among groups of different educational levels.

TABLE
Characteristics of Eligible GHI Population and Population Seeking Psychiatric Treatment During the Period July 1, 1959-June 30, 1960

	ELIGIBLE POPULATION PERCENT	PROJECT CASES PERCENT
Distribution by age		
12 and under	25	8
13-19	10	11
20-49	43	62
50 and over	22	19
All groups	100	100
Distribution by subscriber's occupation		
Semiskilled or unskilled	28	14
Skilled	39	30
Clerical	12	21
Sales	5	4
Executive	5	6
Salaried professional	10	25
Unemployed or retired	1	*
	100	100
Distribution by subscriber's education		
Some grade school	9	5
Finished grade school	13	7
Some high school	29	20
Finished high school	28	24
Some college	12	19
Finished college	9	25
	100	100
Distribution by family income		
$2,000 and under	2	3
$2,001-$4,000	12	13
$4,001-$6,000	42	35
$6,001-$8,000	27	28
$8,001-$10,000	10	9
$10,001 and over	7	12
	100	100
Distribution by marital status-adults		
Single	9	20
Married	86	72
Widowed	3	2
Divorced	1	4
Separated	1	2
	100	100

*Less than 0.5 of 1 per cent
NOTE: The subscriber is the GHI contract-holder (with or without dependents).

As to type of work, it is somewhat surprising that utilization is higher among clerical workers than among salesmen and executives. (In the cross-tabulations we have done to date, the highest utilization was among employed, unmarried, female college graduates between 25 and 29 years of age.)

These differences in utilization by different groups in the population represent perhaps the greatest single problem as to insurability. For example, the GHI subscriber group with the highest utilization had an experience six times as high as the average. The second highest group was almost five times the average. Both groups are made up almost entirely of professional people and their families. On the other hand, from some groups, almost all "blue collar," there were no patients at all.

Further data are indicative of the type of material the project will produce. For instance:

1. In the judgment of participating psychiatrists, the symptoms of patients had a major effect on their family life in 59 percent of the cases. In 53 percent, symptoms had been noticeable for two years or more.

Fifty-seven percent of the patients had not had previous treatment, and the psychiatrists estimated that for 53 percent of them the existence of the project had a major influence on their seeking treatment. Forty percent of the cases were referred to the psychiatrists by other physicians.

2. The distribution of project cases by diagnosis showed psychoneurosis as the most common (44%), followed by psychotic disorders (19%), and personality disorders (14%). This information will be analyzed and correlated later in detail. (One correlation, for example, has shown that the proportion of psychotic disorders was much higher than average among the older and less-educated subscribers.)

3. In cases where final reports have been received, the prognosis for 49 percent is favorable, while 41 percent are listed as uncertain. Three out of four cases are considered recovered or improved, but in 84 percent of the cases the psychiatrist recommends that the patient should have further treatment.

Among the cases which took advantage of all the office treatments to which they were entitled, further treatment was recommended by the psychiatrist for 95 percent; of these, 68 percent actually continued treatment at their own expense. Another 8 percent were referred elsewhere.

On the other hand, in about one-half of the cases for which we have received final reports, the patients did not seek all the services for which they were eligible. The average number of office visits in these cases was approximately five. It is interesting to note the reasons given for this discontinuance of treatment:

	Percent
Recovered, improved	28
Treatment not recommended	6
Resistance to treatment	46
Transferred elsewhere for therapy	14
Expense	6

We believe that the inclusion of psychiatric treatment in insurance plans will help make the public aware of psychiatry as an essential part of general medical care. Further, it can do much to reduce the financial barrier which separates psychiatrists from families of average means.

We hope, therefore, that this project will mean substantial progress toward making psychiatric treatment both socially acceptable and financially possible.

Clinic for Alcoholics

By Thomas P. Fox*

Condensed from Hospital Progress, *December 1960*

In late 1957, St. Anthony's Hospital, St. Louis, Mo., decided to introduce a clinic for alcoholics. Together with Alcoholics Anonymous, the hospital worked out a program designed to provide medical, spiritual, and psychological assistance for these patients.

The specific program adopted included the following regulations: (1) the patient must be accompanied by a member of AA, and the organization must remain in attendance for as long as the doctor in charge deems necessary; (2) the hospital must be contacted prior to admission and no patient is accepted on Sundays or after 7 P. M. on weekdays; (3) if the patient has his own physician, it is preferable that the doctor call the hospital and arrange for admission; (4) the doctors in the clinic will determine if the patient is to be hospitalized or treated as an outpatient; (5) transient cases and repeaters will not be accepted, with the exception of those in the latter group who have made some progress since their last hospital visit; and (6) each patient is expected to pay his bills either through hospitalization insurance or by his own means.

In 1958, some 60 cases were handled in the new clinic. The following year the total swelled to 544. The objectives of the clinic were simple yet basic: to rehabilitate and guide alcoholics to permanent sobriety through an understanding and alleviation of their spiritual, mental, and physical problems.

There are three attitudes, we feel, which alcoholics must possess if any rehabilitation program is to succeed in helping them: the courage to acknowledge to themselves that they are alcoholics; the desire and will to seek help; and a reliance upon supernatural help and guidance.

In working with the alcoholic, the physicians, nurses, and social workers look for any underlying emotional problems affecting the patient. Frequently, once these problems have been uncovered, the reason for the patient's alcoholism also has been found.

Rehabilitation usually begins with the patient's admission of these problems. Then, if there is a need for psychiatric care and the alcoholic requests it, the patient is transferred to a psychiatrist on the hospital staff.

All alcoholics have a social service interview to determine their earnestness, need, and desire for help. Visits by social workers afford opportunity to instruct the patient and his family regarding the aims of the clinic and the cooperation expected.

The alcoholic is treated on an outpatient basis by preference. It is felt that when the patient must come to the clinic regularly for medical care his motivation for sobriety is thoroughly tested. Therefore, he is hospitalized only if the physician requests it or if it is considered necessary because of his physical or mental condition, or home or living situation.

The patient must first be cleared with his family physician before beginning outpatient treatment. A complete examination and periodic check-ups are given to each alcoholic in the clinic. Medical therapy is given as ordered by the doctor in charge of the clinic.

Alcoholics are admitted as inpatients only through the alcoholic clinic. If an alcoholic patient seeking hospitalization is too intoxicated, unmanageable, or unreasonable, he is given initial intravenous as an outpatient and returned to his home. The AA member or relative accompanying him is requested to bring him back to the clinic when it is possible to explain the program to him.

It is a policy not to hospitalize an alcoholic more than once a year (although exceptions to this rule may be granted for good reasons). The usual hospital stay is five days.

All hospitalized alcoholics are visited daily by the alcohol clinic staff in an attempt to teach the patient the principles of alcoholic therapy. AA members also visit the patient as part of the therapy.

On dismissal from the hospital, the patient is given an appointment to return to the alcoholic clinic the following day. All alcoholics are given clinic appointments regularly for two months or longer. They are encouraged to come in whenever the urge to drink occurs, *before taking the first drink.* The patient and his family are informed as to the danger signals, and AA members keep in contact with the patients and

*Associate administrator, St. Anthony's Hospital, St. Louis, Mo.

interest them in their program. Families are urged to notify the clinic of "slips" and AA members in turn are then advised to follow the patient more closely.

Although the hospital has experienced some reluctance and outright unwillingness on the part of a few of the nursing staff to cooperate in the alcoholic program, this is largely due to a lack of understanding of the alcoholics' problem and the importance of the clinic program. On the whole, the hospital has received satisfactory assistance from both the medical and nursing staffs, and the results have been encouraging.

The way back is long and difficult for these patients, but tolerance, patience, firm kindness, and encouragement on the part of the hospital staff can be compelling factors in the complete rehabilitation.

How to Resign from a Book Club

The *Wall Street Journal* recently printed a little piece about a (we hope) mythical book club which all busy administrators who have ever had this particular problem should appreciate.

"It was the Modern Super-Executive's Instant Desk Combined Encyclopedia Dictionary and Unabridged Barman's Guide that got me. All I had to do was to sign the coupon and it was mine absolutely free of charge—except for merely promising to buy three desirable, dirt cheap books a year.

"Every month the book club sent me enthusiastic descriptions of its current offering, plus a little card with holes punched in it by machine. All I had to do to receive the current choice was nothing. It was what I had to do not to receive it that caused all the trouble. I had to sign the card and send it back within five days. What happened was that I was out of town or the card and literature got thrown away, or someone used the card as a bookmark or dental floss. It was when the statement reached $53 and the pile of unread books reached 14 that I decided to resign.

"I wrote a pleasant note of resignation, enclosing a check, and by return mail I received two copies of the current selection instead of one. I then tried a threatening letter but nothing worked. Obviously the automatic card machine could never give up a customer once he was in its little electronic brain. The next month, when the card came, I cut an extra hole in it of the same size as those already punched and sent it back.

"In return I got a sweet letter saying the book club was sorry I was moving to Russia and enclosing a check for $53. I am reading the books now and enjoying them thoroughly."

Who Pays When the Vendor Doesn't Deliver?

By Marshall Coke*

Condensed from Purchasing, *October 10, 1960*

Every purchasing agent knows that if a supplier breaks a sales contract and refuses to deliver merchandise under its terms, he may be sued for damages. But how much can you collect? Unless you know how damages are computed, and the legal basis on which they are recovered, you cannot formulate the strongest contract.

When bringing suit for breach of a sales contract, the buyer is entitled to recover the actual damages he has sustained—the direct, natural, certain, and probable damages which the parties could reasonably have foreseen at the time the contract was made.

Ordinarily, a buyer cannot recover more than the actual damages sustained. And in cases where he can prove none, the court will merely award him nominal damages.

In some instances purchase contracts are written in an attempt to anticipate possible damages in event of a breach by the supplier. Such damages are termed "stipulated damages," and as a general rule they will be enforced by the courts if they are reasonable.

It is also possible to arrange for damage payments after the breach has been made. In this situation it is imperative that a written, signed contract be made. Agreements made after the breach will be enforced by the courts, provided they are supported by sufficient consideration.

In the simple and straightforward cases where a supplier breaches a contract by simply failing to deliver, the measure of damages is the difference between the contract price and the market price.

If the market price is the same or less than the price in the sales contract, then the buyer is not entitled to recover any general damage, and any recovery on a suit will be limited to special damage which may be proved.

One important aspect of the law of purchases is that the buyer cannot purchase goods of a higher quality and expect to recover the difference between the price paid for the high-quality goods and the contract price of the lower-quality goods. (The only exception is in the event the buyer cannot obtain goods of equal quality on the open market and has to substitute more expensive goods.)

(Continued on next page)

*Pen-name of a member of the bar who holds a responsible purchasing position.

If you should buy your substitute products at a price above the lowest possible price, then you can recover only the difference between the contract price and the lowest price, and not the difference between the contract price and the price you paid.

If you purchase other goods without making any inquiry as to the market conditions or seeking other quotations, then you cannot expect to recover the difference between the contract price and the price you eventually pay if it is higher than the market price.

When a supplier fails to deliver, you are under no obligation to actually make a repurchase, and even though you do not go ahead and purchase the goods specified on the contract, you can still recover from the supplier the difference between the contract price and the price you would have had to pay to procure the goods at the time of the breach. If, however, you do buy or repurchase at a price which is less than the contract price, you cannot recover any damages.

If, in formulating a contract of sale, you can foresee damages in excess of what it would cost you to buy from another source, you should specifically include the nature of the damages in the written contract. This puts the seller on notice that he will be obligated for special damages if he breaches your contract. Otherwise, the seller is only obligated for damages which he could reasonably have foresees by exercising due diligence.

Purchasing agents are constantly making sales contracts. Of course, the most important function of a contract is to formulate an agreement between the parties to prevent misunderstanding. The legal consequence of a contract, however, is the basis for collecting damage if one of the parties fails to perform. Therefore, the PA should thoroughly familiarize himself and keep in mind these legal principles when formulating the contract with his supplier. In this way he will be able to write the most effective contracts.

All digest article illustrations by Pekarsky

A NARCOTIC RECORD

By Frances I. Purdy*

Condensed from American Journal of Nursing, *February 1961*

By developing a single-sheet form we have improved our method of recording narcotics.

Formerly we used 8 x 11" sheets which were inadequately ruled for the checking of counts done at change of tours. Each available narcotic had its own color-coded sheet, and the 20 or so sheets were kept in a binder. This meant the nurse had to search for the right sheet to record the drug and also for any checking that had to be done. The sheets for drugs that had limited use might well be on the units for many months.

In contrast, our single sheet shows the total usage of all narcotics and the checking of counts at the end of each tour. The sheets are also letter-coded to indicate the unit in the hospital.

The 8½" x 14" sheets are bound in pads of 50 and numbered consecutively. They are kept in a side-opening binder in a convenient place.

Directions for use are on a card stapled inside the cover. They read:

1. Receiving drugs from pharmacy: nurse in charge brings record to pharmacy with requisition for drug. Upon receiving drug, nurse and pharmacist sign record.

2. Administering and recording drug: in addition to charting narcotics given on nurses' notes, the nurse must record administration on narcotic record immediately after giving drug.

3. Checking narcotics: at each change of shift the nurse from off-going and nurse from on-coming shift check narcotics. Count must coincide with recorded drugs given on record and amounts remaining in narcotic cabinet. Both nurses then sign in nurses' signature column.

4. Numbered pages in record form are used indefinitely until entire record is completed, at which time page is taken from pad and turned in to pharmacist. The next numbered page is then started.

5. Narcotic keys are to be carried by the nurse in charge at all times except when she lends them to a staff registered nurse assigned to give medications. Nurse in charge will give narcotics to private duty nurses when narcotics are ordered for their patients.

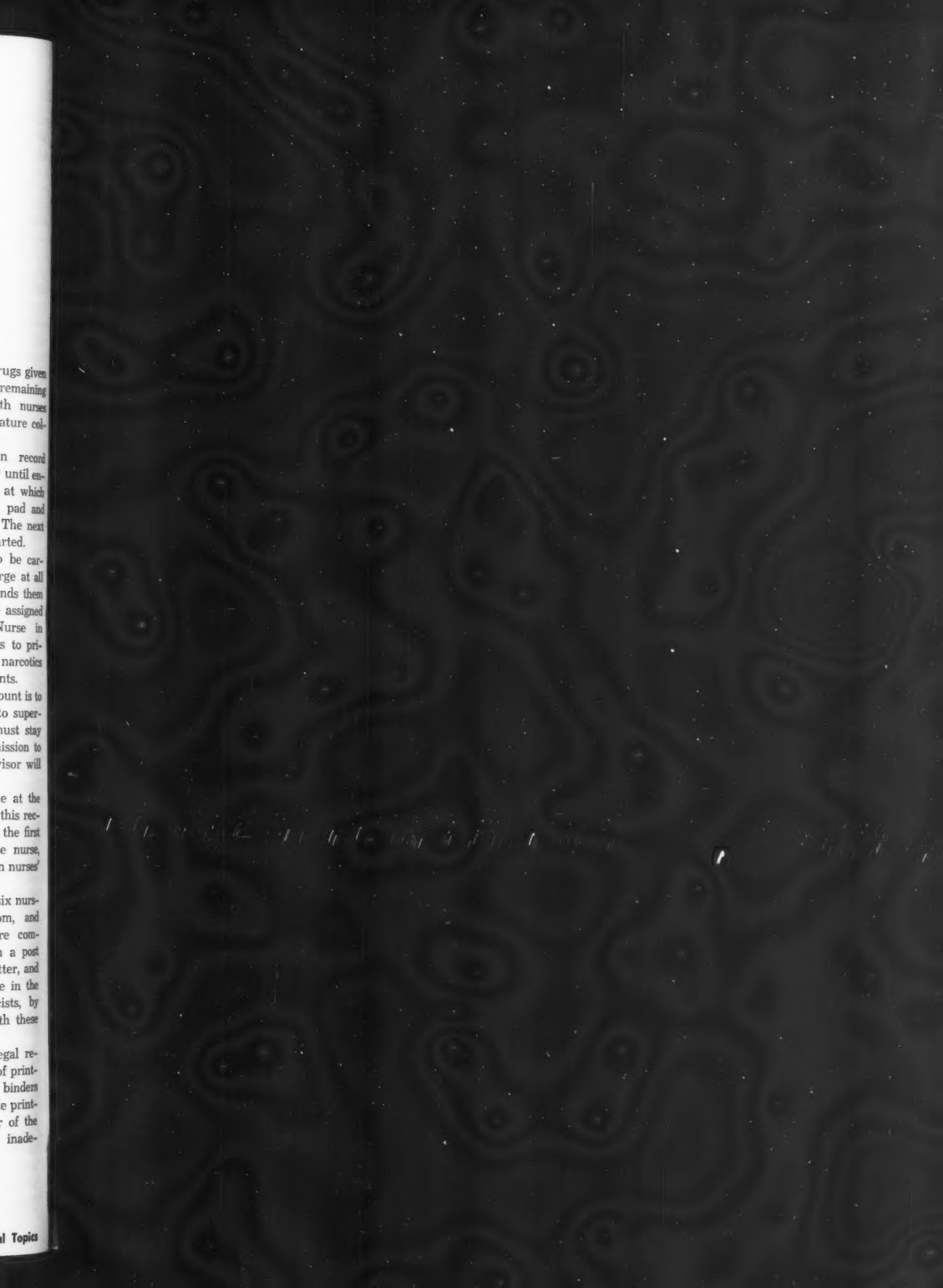
6. Any discrepancy in count is to be reported immediately to supervisor, and both nurses must stay on duty until given permission to leave. The nursing supervisor will tell the nurses what to do.

7. A total count is done at the completion of a sheet and this record is carried forward on the first line of next sheet by the nurse, and she signs both sheets in nurses' signature column.

As the sheets from our six nursing units, operating room, and emergency department are completed, they are stored in a post binder, indexed by unit letter, and stored in number sequence in the pharmacy. (Our pharmacists, by the way, were pleased with these new forms.)

This record meets all legal requirements. The total cost of printing and supplies, including binders and counters, is less than the printing alone of a single order of the former multi-colored, but inadequate, records.

*Director of nursing, Beekman-Downtown Hospital, New York City.



Airborne Medics Study Threats To Astronauts' Health

Food Waste Spoilage, Odors Separate Problem in Short Flight

Norman G. Roth, Ph.D., and *Robert B. Wheaton*, Whirlpool Corp., St. Joseph, Mich.:

Our problem in treatment of food waste under space-flight conditions was somewhat different than that considered by other investigators. A number of studies have been reported on waste-handling for relatively long space flights. Most of these reports are concerned with processing and recycling of wastes for production of food and/or for photosynthetic air-balance maintenance. In the short time period involved in the concept on which we were working, such waste processing was considered to be neither necessary nor desirable. In flights of this short duration we are merely concerned with holding the wastes in an innocuous condition so that no safety or discomfort problems are produced.

Investigation of waste storage was divided into two phases: storage of dry waste and storage of wet waste. Dry waste includes items such as bread, cookies, and similar materials. Odor production from spoilage of dry wastes will not occur if these items are kept in a dry state. The problem of storage of wet waste involved containers from frozen, canned, and dehydrated foods, and a general wet-waste storage "can."

Frozen food containers were replaced in the freezer compartment in which they were originally stored. No further control measures are required. Containers from canned and dehydrated food and the waste can, however, will contain particles of food which will contribute to odor and spoilage.

A laboratory investigation was concentrated on a study of representative antimicrobial agents to kill or suppress growth of micro-organisms in waste food and thereby prevent odors and gas from forming.

Frozen beef pot pies were selected as a representative and reproducible test food for these experiments. These were ground and thoroughly mixed with test antimicrobic agents, and placed in the polyethylene tube material which has been adopted by Wright Air Development Division for space feeding. Tube material was cut into nine-inch lengths and heat-sealed at one end. Each tube was approximately half-filled with 50 Gm. of the beef pot pie test system or with 50 ml. of a second test system, pasteurized homogenized milk. Tubes were incubated 14 days at 30° C.

All of the germicides tested in this series at proper concentrations in the polyethylene tubes were able to control odor and gas formation. However, only the iodophors seemed satisfactory for use in the space application. Formaldehyde vapors are much too irritating to be tolerated in a closed air system, in case of leak. Sodium dichromate and sodium azide are too toxic to be considered in case of equipment failure.

An iodophor appeared to be the best choice for several reasons. Iodophors are considered to be nontoxic; they have been accepted by many municipal health departments for use in glass-washing and in cleaning dairy equipment. Their surface action should assist the germicide in spreading through the waste food at zero gravity.

Waste Disposal, Recycling Essential to Health, Safety of Astronauts

J. D. Zeff, R. A. Bambenek, Mechanics Research Division, American Machine and Foundry Co., Washington, D. C.:

Storage technics determined best for use aboard space vehicles are low-temperature, high-temperature, and liquid-disinfectant. All three methods either control or completely inhibit the growth of bacteria.

For low-temperature storage, a temperature of -20° C. has been found adequate to inhibit bacterial growth. This temperature can be achieved in an aerospace vehicle by thermal radiation to interstellar space, refrigeration using auxiliary power, and evaporative cooling of liquids.

The radiation-cooled system would be mounted directly into the vehicle wall. Since this unit would accumulate all wastes, the volume and mass are directly dependent upon mission length. The obvious disadvantage of this system is that the radiation panel must continually face interstellar space to be effective.

In the evaporative cooling method, solid wastes are accumulated in the container, and water from the wastes is evaporated or sublimated. A sterilizer in the line is required to kill any entrained micro-organisms.

High-temperature storage renders wastes innocuous by sterilizing the bacteria by the use of moist heat. The noxious gases generated would have to be dumped overboard or removed. Electrical-resistance heating is an attractive means of storing wastes if auxiliary power is available. The advantages of such a system are that it is not dependent upon the attitude of the vehicle and electrical power could be utilized during low-demand periods on the power source.

(Continued on next page)

Waste-Recycling System Produces Water Both Potable and Palatable

Capt. R. A. Bosee, MSC, USN; P. R. Tiller, L. J. Santa-Maria, and *N. M. Burns, Ph.D.,* Air Crew Equipment Laboratory, Naval Air Material Center, Philadelphia: As the concept of a self-contained, closed-loop, life-support system proceeds from the drawing boards to actual production considerations, several technics are currently being investigated for their suitability in recovering water from human waste. Electrodialysis, distillation, filtration absorption with ion exchange, and freeze-drying are but a few of the methods now available.

Final selection of a water-recovery system will depend upon crew size and mission objective. The point at which water-recovery systems demand inclusion into vehicular design is reached when the weight of the system is less than that of the stored water.

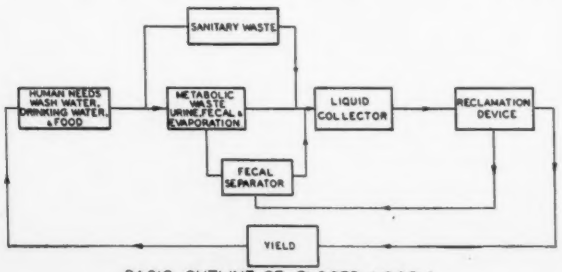
The water-recovery system used in our study was basically a vacuum-distillation process with a platinum catalyst employed to remove ammonia and other volatile organic compounds. It was capable of a yield of 150 to 180 ml. of potable water per hour. The study subject was a male naval officer, 50 years of age, in excellent health.

In order to complete the tests in as short a period of time as possible, and to allow the water lost through respiration and other metabolic processes to be replaced, the subject's urine was supplemented by urine from other sources. All urines collected were processed, the recovered water was refrigerated, and carried by the subject in conventional thermos jars. The liquid obtained was used by the subject for a six-day period as his sole source of beverage. Instant coffee, tea, and fat-free dry milk were prepared with the potable water.

Prior to the recycling process, a daily sample of the subject's urine was routinely analyzed for specific gravity, pH, color, and qualitative albumin and sugar. After recycling, the potable water was analyzed for epinephrine and norepinephrine content as well as for pH level.

The daily samples of urine which were clinically analyzed presented a normal picture. Specific gravity determinations varied between 1.011 and 1.023, the latter value recorded on the last day of the test. The pH varied between 5.0 and 6.0, well within the normal range. Urine color varied from light yellow and clear early in the test to yellow and cloudy on the last day. Qualitative albumin and sugar determinations were negative.

The pH determinations performed on samples of recovered water in each daily yield revealed excessive acidity during the first three days of the test: 2.8, 3.2, and 3.2. This was corrected during the remaining days of the study so that the subject's water intake had a pH maintained between 6.0 and 7.0. Tests for the presence of epinephrine and norepinephrine were made using a modified von Euler method. The recycled urine showed no traces of either of these catechol amines.



BASIC OUTLINE OF CLOSED-LOOP WATER RECOVERY SYSTEMS.

The potable water produced by the device was entirely palatable, free of odor, and well received. Basically, there was little or no significant decrease in the subject's daily water intake. Refrigeration added to the water's acceptability in that it appeared to remove the flat taste characteristic of distilled water.

'Spontaneous' Hypoglycemia Presents Confusing Diagnosis Picture

Maj. John R. Pfrommer, USAF (MC), chief, aviation medicine, USAF Hospital, Weisbaden, Germany: Hypoglycemia and symptoms ascribed to it have been reported with a variety of pathological conditions. Hypoglycemia has been seen with many pancreatic disorders and a variety of neoplastic diseases. It is said to occur following gastrectomy, as part of the toxicity of some drugs, and has been reported in a diabetic patient with intermittent periods during which insulin was not needed.

There have also been reports of hypoglycemia occurring in the absence of demonstrable pathology—an absolute or relative lowering of blood glucose values caused by some yet-undiscovered mechanism. This condition has been variously termed spontaneous hypoglycemia, reactive hypoglycemia, functional hyperinsulinism, relative hypoglycemia, and psychosomatic hypoglycemia.

A high-protein, low-carbohydrate diet has been recommended in the management of patients supposedly experiencing spontaneous hypoglycemia. It has been noted that the history of a light, carbohydrate breakfast recurs often in dealing with hypoglycemia patients.

This light-carbohydrate meal history occurs often in any nutritional survey of air-crew personnel. Flight surgeons, seeking to explain some aircraft accidents and mysterious incidents, have been interested by the possibility that hypoglycemia with symptoms might occur spontaneously. Considerable effort has been directed toward discovery of the effects of altitude and hypoxia on blood sugar levels. Results are confusing.

Significant lowering of blood glucose levels have been reported in a study of humans who had fasted for 15 hours before being subjected to simulated altitudes of about 25,000 feet. The gradual decrease in blood sugar resulted in 40 to 45 percent lower glucose values at the decompression chamber altitude of 25,000 feet.

Later, another study found a rise in blood sugar to be the normal response of dogs and sheep exposed to altitude, although no significant rise occurred below 24,000 feet. It has also been reported that prolonged anoxia leads to hypoglycemia in unanesthetized rabbits. Results of this latter study have been extrapolated to imply an attribute of man, stating that hypoxia is a potent stimulus for elevating blood glucose.

Our study exposed USAF trainees to a simulated altitude of 18,000 feet for one hour. Glucose levels of the subjects did not decrease. In a few cases the values rose slightly, but generally they remained constant.

A County's Continuing Program For Infection Control

"The infections problem is probably our major problem concerning the health of the public, in the field of infectious diseases. We all know it's here, we all have it, and we are sure that it will continue to be a problem."

With these words Dr. Edward Russell, health officer of Orange County, California, summed up the reason for maintaining an active, continuing program for control of all hospital infections.

For three years Orange County has had such a program on a county-wide basis, under the auspices of the Orange County Medical Association, with the strong support of the Orange County Health Department. Now that the program is well established, it has been expanded to include the 32 convalescent hospitals as well as the 15 hospitals in the county.

Coordinating group in the county-wide program is the infections control committee of the medical association, whose chairman and members are appointed by the president for a one-year term. Other key participants are the health department and the infections committees in the individual hospitals.

"We approached this problem as a professional one, through the medical association," Dr. Russell explained. The fact that the association made the infections control committee a standing committee, he noted, indicates the medical profession's belief that the infections problem is a serious one which must be dealt with on a long-term basis.

Two existing committees—the inter-hospital committee and the public health committee—formed the nucleus of the new committee, which was then expanded to include additional medical specialists and the chairmen of the infections control committees in all the hospitals in the county.

It was stipulated that the committee should include representatives of these specialties: obstetrics and gynecology; general surgery, orthopedics or another surgical specialty; pediatrics; internal medicine; bacteriology and pathology; general practice, and public health. Total committee membership was not to exceed 18 persons.

For professional liaison and as advisors to the committee (not members of it), there were to be two representatives of the Orange County Osteopathic Society, one oral surgeon from the Orange County Dental Society, two hospital administrators, and one nursing supervisor each from the departments of surgery, obstetrics and pediatrics, appointed by the president of the Orange County Nurses' Association.

The duties of the committee, as agreed upon when it was established, are:

(1) Review all epidemic intelligence and surveillance relating to pyogenic infections.

(2) Advise the various hospital infections committees to the end that reasonably uniform policies and procedures shall prevail the county.

(3) Gather and disseminate information designed to improve the control of pyogenic infections.

(4) Develop and distribute inservice training manuals, check sheets, and other informational literature for the use of hospital personnel.

(5) Cause releases to be prepared for the information of the public.

(Continued on next page)

(6) Advise on and review special studies into various aspects of the problem.

(7) Make reports annually to the participating professional associations.

The infections committee of each hospital has direct responsibility for the control of pyogenic infections within its hospital, and makes recommendations to the medical staff, the administration, and any service of the hospital, concerning improvements in technics, procedures, facilities, and equipment which will assist in the prevention and control of infections. In addition, each hospital infections committee is expected to assist the county infections control committee in various studies, in the development of manuals, and in the dissemination of information.

The duties of the health department in the county-wide program are: (1) gathering of epidemic intelligence and surveillance; (2) providing consultation in various fields through which the country-wide committee and the various hospital infections committees may standardize and improve bacteriological identification technics, establish improved technics and procedures, and recommend improvements in hospital facilities and equipment; (3) assisting in the development and production of inservice training manuals, check sheets for various services, and other informational literature as required; (4) assisting in the preparation of releases for the information of the public; (5) assisting in special studies into various aspects of pyogenic infections in institutions.

How effective has the county-wide program been?

"The committee feels rather strongly that if it were not for the activity of the large, parent committee, we would have relatively little activity within the hospitals themselves," Dr. Russell declared. "The support we give to each hospital's infections committee gives them the courage to go on with the problem. The committee is a forum and an information-gathering and information-dispensing agency, with sufficient laboratory support. We discuss what has been done, what we should do next, and what we should recommend next. Through the efforts of the committee, the efforts in the hospitals have been much more meaningful.

"One of our problems—which we are tyring to lick—is the infections committee that is only on paper. We know that the committees in eight out of the 15 hospitals are meeting regularly at least once a month. They are sitting down with the records librarian and the head of the laboratories, the administrator, and the heads of the services, and going over the records, one by one. I have been much gratified to see the kind of work they are doing.

"There are some hospitals in which the committees are inactive, and we are in the process of building a fire under these."

Meetings of the county committee (held monthly at first, now quarterly) are attended by the infections committee chairman of each hospital. If a chairman cannot attend, he sends someone in his place.

Without regular attendance by the hospital's committee chairmen, Dr. Russell said, "the program would be functioning in an ivory tower, with nothing happening below a certain level."

"The Health Department's role in the picture," said Dr. Russell, "is to offer support. We find more and more that we work for the other fellow, and we think that is really our proper place."

This support is given in three major areas: assistance to hospitals in training their personnel through special instructional courses; assistance in disseminating information on infections control to the medical profession and the public; and laboratory studies—particularly antibiogram studies—to give the hospitals information they need about infection-causing organisms in their hospitals.

Dependence on antibiotics undoubtedly has been a factor in the increased incidence of infections, Dr. Russell pointed out. "We used to have quite respectable infection rates before we ever saw an antibiotic . . . they were kept down by dint of very rigid and assiduously followed aseptic technics. We have slipped a great deal in the interim, and we depend far too much on antibiotics. If we combined judicious use of the antibiotics with good, sound technic, then we would be doing the best that could be done, with available knowledge and available tools.

Dr. Russell (l.) discusses appearance of tetracycline-resistant streptoccal infections with Robert E. Ball, M.D., chairman, Orange County infections control committee.

Mrs. Joanna Olmstead, senior public health nurse, Orange County Health Department, demonstrates to a group of nursing-home employees correct procedures for keeping their hands clean. Chart is one of visual aids prepared by health department personnel for use in intensive instructional courses given for hospital and nursing-home employees.

"In our laboratory studies, we are trying to get the selection of antibiotics out of the field of trial and error, and see that some clinical and laboratory judgment is available on the use of antibiotics. We are trying to follow the natural history of the disease. It appears that through mutation, or by other means, the antibiotic resistance patterns of these organisms vary from time to time."

Committee members and the health department staff have put in a great deal of time, effort, and money into the program, Dr. Russell said.

"We haven't added it up, and we don't expect to; we think that the expenditure was justified, that it was needed, and therefore it should be done—that costs within reason should not stand in the way.

"Support for the laboratory program is from Health Department funds. Although we don't 'run the show,' we feel that we have the responsibility to utilize the resources of this institution for the common good, to protect the public's health. It's everybody's problem, and we in turn spend everybody's money for it. We have had nothing but approval from the public and from the appropriating bodies."

A well-organized campaign to educate the medical profession, hospital personnel, and the public about the need for this program and their cooperation in it undoubtedly played a major role in the program's acceptance. Logically, the first information distributed was to the phyiscians. In the fall of 1958, shortly after the committee had become active, the health department devoted five consecutive issues of its semimonthly Bulletin to Physicians to the subject of antimicrobial-resistant infections. At no time before or since, in the bulletin's 11-year history, has this much concentrated attention been devoted to a single topic.

The first of these bulletins summarized the problem of infections and explained the responsibilities of the county-wide infections control committee and of individual hospital infections committees, and reported that the county committee had accepted three epidemiologic tools: a telephone poll of 10 percent sample of the births occurring in each hospital each month (to establish a norm for incidence of infection in the newborn and their families); laboratory reporting of all coagulase-positive cultures of *Staph aureus;* and sputum cultures on all cases of pneumonia.

The second in the series discussed the role of environment in infections, and reported the preparation of check lists to serve as guides to the hospitals for systematic review of each service of the hospital.

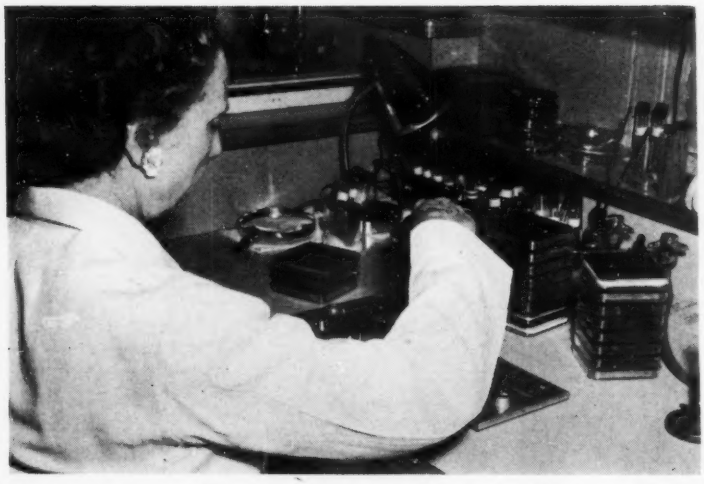
Methods of sterilization and chemical disinfection were discussed in the third article, and the fourth emphasized the responsibilities of personnel in the control of infections. The final article in the series, subtitled "Report to Everybody," was really addressed to the public. It included a list of "do's and don'ts" dealing primarily with hospital visiting.

"We found that visitors were overrunning the hospital," Dr. Russell said. "They were teeming through the hospital floors into wards, sitting on beds, coming in with infections, and adjusting dressings of neighboring patients. I walked through one of our better hospitals one night, and in about 15 minutes I saw seven or eight flagrant violations of technic, inadvertent of course, by the general public. There were as many as seven or eight visitors at a bedside. Children were sitting on the floor, picking up things off the floor and putting them on the patient's bed, or the bedside table.

"It became quite apparent that the efforts of physicians, nurses, hospital administrators, laboratory personnel, housekeepers, food handlers, laundry workers, and everyone else to 'tighten up technics all along the line' would fall short of accomplishing maximum safety for the patient if the general public did not do its share.

"We set out to make the public aware of the need for its assistance. We have reasonably good cooperation from the press in putting across to the public that the control of infections was everybody's problem and that everyone had a responsibility in it—the general public, specifically the visitor, as well as the physician and the nurse with their skill and their discipline."

The infections committee recommended specific regulations on visiting, and at its request Dr. Russell issued an executive order setting forth these requirements and using Section 2540, Title 17, California Administrative Code, as the legal authority for the order.



Mrs. Anne Conway, senior microbiologist in the health department laboratories, inoculates plates for testing of bacterial susceptibility to antibiotics using Pepper Laboratory inoculum replicating apparatus. Below: Close-up of technic.

The restrictions—which the committee reviews periodically—are:

1. Visiting at any one visiting hour should be limited to two visitors, except in the maternity unit, in which only one visitor should be allowed during a visiting hour.
2. Visiting hours should be limited to one hour in the afternoon and one hour in the evening.
3. No one under the age of 16 should be admitted as a visitor.
4. Persons with colds and other infections (including skin infections) should be instructed to omit visiting until they have recovered.
5. Visitors should be instructed not to sit on beds or to pick up articles from the floor or to place these or any other contaminated articles on the patient's bed or bedside table.
6. Visitors should be prohibited from visiting with patients in adjoining beds.

Provisions were established for making exceptions to this order in the case of a terminally ill patient.

These regulations were included in the leaflet "A Personal Message About Your Hospitalization," approved by the county-wide infections control committee and produced by the health department. The leaflets are mailed by the hospitals to elective cases before admission, and are also given out by physicians in their offices.

The leaflet includes suggestions to incoming patients on how they can help protect themselves against infections, by avoiding crowds and persons with infections and by bathing daily with a germicidal soap for five days before entering the hospital.

Widespread use of the leaflet has caused quite an improvement in public awareness of the problem of infections and of its responsibility in controlling it. One hospital mails out about 1,000 leaflets a month; two others use almost as many. The number used, of course, is dependent on the size of the hospital and the number of operations performed in it.

By and large, the efforts of the hospitals to enforce the restrictions on visiting have been successful, and the public has been understanding and cooperative—as long as it is informed. As was pointed out in an article on "Hospital Visiting," in the *Bulletin to Physicians*, issued February 13, 1961, "Difficulties have varied with

the personality of the visitor but also with the degree to which the visitor has been previously informed of the restrictions and the reasons for them . . . A reasonable explanation given at the right time will suffice for most people."

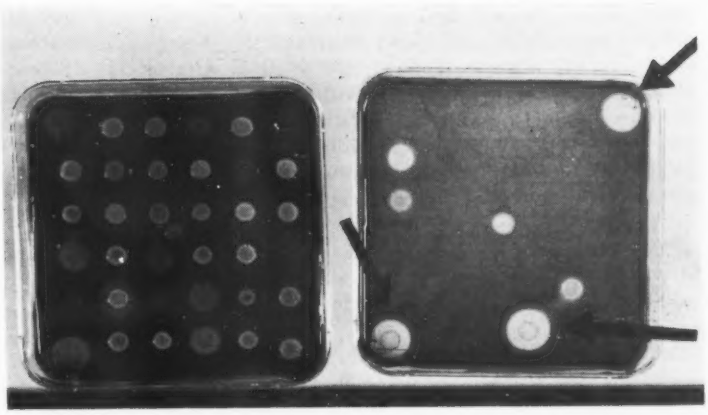
The article went on to remind physicians and their office assistants that effective use of the leaflet can be a great help in obtaining the public's cooperation in the control of the visiting problem.

Another part of the educational program is the instruction of hospital personnel—particularly the nonprofessional personnel—about infections and their control. To do this, the health department organized intensive two-hour orientation courses, aimed at various groups with different duties in the hospital: for instance, the food-handlers, the laundry personnel, the housekeeping personnel and the attendants.

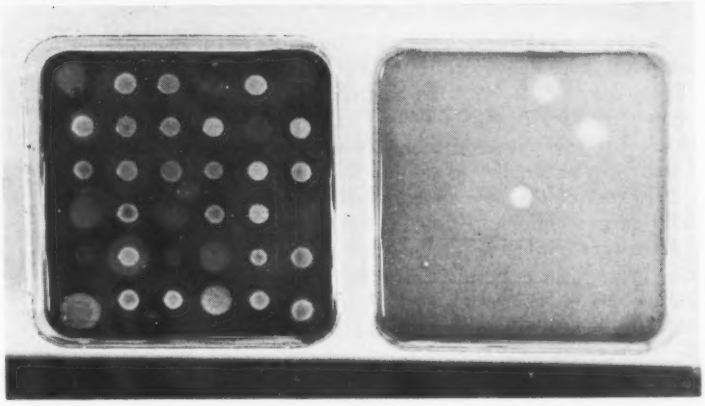
Materials used for instruction included the film, *Hospital Sepsis: A Communicable Disease;* literature from the U.S. Public Health Service, the American Hospital Association, the American Medical Association, and the State Department of Public Health; and additional material—including visual aids—prepared by staff members of the health department. The courses are given in the hospital by a surpervising sanitarian and a supervising public-health nurse, who have completed one round of the hospitals and are now going back for a second time.

Dr. Russell confessed that he thought one slip-up had been made in scheduling these courses: "We should have asked one more question of the people: how long they had been working at their respective hospitals.

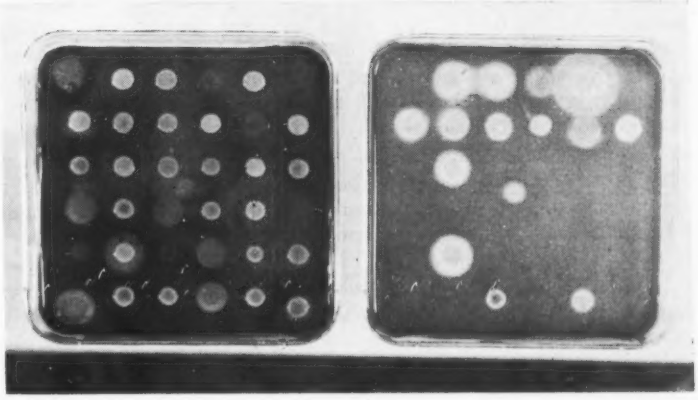
Results with use of three different antibiotics against the same organisms are shown in these pictures. Control plate in each test contained 10 colonies of beta hemolytic streptococci, 24 colonies of hemolytic coagulase-positive staphylococci, and two colonies of hemolytic *E. coli*.



1. On left: control plate. On right: duplicate plate containing 5 ugs. of tetracycline per ml. of blood agar. Arrows point to resistant Group A beta hemolytic streptococci.



2. On left: control plate. On right: addition of 5 ugs. of Vancomycin/ml. of blood agar inhibited all organisms except the two colonies of *E. coli*.



3. Left: control plate. Right: duplicate plate to which was added two units of penicillin/ml. of blood agar. The staphylococci and the two coliform colonies are not inhibited.

With that information we would have known when to go back, because the average stay for employees could determine date we should return and then we could return periodically. Now we are not sure when to go back. Are 75 percent, 50 percent, or 25 percent of the employees new, or will we be talking to the same old crowd?

"Now the activity of the committee has expanded into the nursing-home and convalescent hospital field, and we have set up training courses for personnel in these institutions. With 15 hospitals and 32 convalescent homes to cover, we must husband our time as carefully as we can."

A major reason for expansion of the instructional program into the convalescent hospitals was the conviction that the possibility of infection is greater in older people who are hospitalized.

The courses given in the convalescent hospitals had to be revised somewhat from those used in the hospitals. One reason, as Dr. Russell pointed out, was that in the convalescent hospitals "the same people did everything; they were the housekeepers, sometimes even the laundry personnel, food handlers and patient-service personnel."

The laundry and housekeeping people are taken in one group, and the food-handlers in another. The people who serve the patients directly, such as attendants, have a slightly different course. They are taught more technics and more about handling patients—are given such information as how to protect linens and protect the patient from contaminated linens.

The courses give these employees a rather intensive orientation at a practical level in infections, their char-

acteristics and control, personal hygiene, technics, handling of linens, food supply, and other topics.

"We usually ask the administrator to sit in with us, or someone in his behalf, to help with the evaluation of the course," Dr. Russell said. "We also pass out evaluation sheets to the participants, asking them what they liked about it, what they didn't like about it, what they got out of it, and what they suggest we do to improve it.

"The course is in a more or less continuous process of revision. Two persons on our staff—the sanitarian and the nurse who present the courses—give most of their time to this program."

Maximum effectiveness of this program depends upon use of the best teachers available, he pointed out, "and these turn out to be sanitarians and public-health nurses at supervisory rather than staff level."

In the convalescent hospitals, the laundry problem was one that demanded immediate attention. It was "fairly easy to resolve," Dr. Russell said, because there were only four hospitals which utilized hospital laundries. Three of these operated their own laundries; the fourth sent its laundry to another hospital.

The rest of the convalescent hospitals had contracts with large laundry plants in the Los Angeles area, which were doing the laundry exclusively as an operation in the field of hospital sanitation. By visits to those plants and by discussions with the owners and operators, the health department personnel were able to effect changes in technic.

"We found at first that the drivers making a pickup and delivery would throw the dirty laundry into the same part of the wagon from which the clean laundry came. When they were calling on two hospitals, and they delivered to one and picked up its dirty laundry, putting it in the same truck with the clean laundry for the next hospital, there was clearly a problem.

"In some cases the laundry was not packaged but was simply stacked, with a sheet of blue laundry paper on the floor of the truck and another sheet on top of the laundry. The same man, in the same clothing, took care of both the clean and the dirty.

"This handling problem was solved by inducing the laundries to require that all of the dirty laundry be placed in impervious bags and remain in them until it arrived at the laundry, where it would be emptied into the big washers to be sterilized.

"I don't mean to imply that the whole laundry problem has been solved. Some of the laundry chute problems that exist in hospitals are still unsolved, and I don't know how they are going to be solved, short of abandoning the buildings and constructing others. This would be very expensive and is very unlikely to be done; but better technic can be used in the handling of laundry within the hospital.

"Probably in another generation or two we will have hospitals that will be much more sanitizable than the present-day hospital is. But we are emphasizing that good work can be done with limited facilities, that merely having a lot of stainless steel does not of itself make a hospital sanitary; it may be easier to keep and easier to sanitize, but it is not per se sanitary.

"Sanitation consists mainly of what we do as individuals, and so it's a job that we're never going to finish. Improvements will be maintained as long as we exercise the proper degree of awareness, alertness, and diligence in technic required to maintain an aseptic environment in the hospital."

Research on Resistant Strains

Another very important part of the infections control program is research on antimicrobials and drug resistance, conducted in the health department laboratories. Hospitals submit organisms that they have found to be apparently resistant to a large number of the commonly-used antibiotics, and the laboratory personnel attempt to determine which antibiotic will be most effective against these organisms.

"We're a sort of supreme court of antibiograms," Dr. Russell explained, "in that hospitals utilize their disc methods and we often duplicate them, but on some given organism, and in addition we do tube dilutions or use the Pepper Laboratory replicating device to run a large number of antibiograms at one time. Practically the full time of one microbiologist is given to this one job."

The health department got into this work on antibiogram patterns as a result of inquiries from physicians who said they had used what their antibiograms said should be the drug of choice, but it had not been effective. In attempting to solve the riddle the health department began performing antibiogram patterns on the organisms submitted.

"The disc methods which have been so popular for determining antibiotic resistance are useful, but they still have a fairly high percentage of error," Dr. Russell cautioned. "In accuracy they might be compared with the use of a litmus paper for determining the pH of any substance."

In the health department's studies, a comprehensive antibiotic sensitivity pattern is prepared for each pyogenic organism, and correlated to the antibiotic sensitivity patterns of the previous months in the same hospital. Laboratory personnel also make comparisons of the sensitivity patterns prevailing in the organisms recovered in various hospitals.

At the direction of the hospital's chief of staff and under the supervision of the hospital infections committee, history sheets on all suspect and known pyogenic infections in the hospital are completed by the supervising nurse or by a qualified professional person designated by the superintendent of nurses. History sheets are also made on all patients from whom the laboratory has obtained cultures of any of the organisms in the index group of the study.

The pathologist compares history sheets prepared on the basis of nurses' observations with the histories of patients on whom the laboratory has obtained positive cultures. When there are duplicate histories, the more complete one is retained and any pertinent information from the other one is transferred to it. The pathologist then directs the cultures be taken on patients in the group who have had no recent cultures of their suspect lesions.

History sheets are reviewed for completeness by the chairman of the hospital infections committee, and sent to the health department for statistical analysis, following which the information on them is coded, key-

punched on an IBM card, and filed for future study. The health department prepares monthly summaries for each hospital, reports of which are sent to the chairman of the infections committee and to the hospital pathologist.

The health department does monthly evaluation series for antibiotic sensitivity. The organisms tested are those in the index group on which the hospital laboratories have done disc sensitivity tests. Copies of these reports go to the pathologist, the chairman of the hospital's infections committee, and the chairman of the county-wide infections control committee.

Laboratory findings in these studies reveal some changes in the infection pattern in the area. The gram-negative bacilli and some of the enteric bacteria are appearing more and more.

Other laboratory studies have resulted in significant findings about the role of infection in sudden deaths of infants.

"In the past we had no opportunity to find out why these babies died," Dr. Russell pointed out. "It was often said that they smothered in the bedclothes. Actually, we know that smothering is a very rare occurrence. I have a personal doubt as to whether it ever happens, unless the baby falls out of bed and the bedclothes are caught around its neck.

"We have been performing postmortem examinations on all infants who have died suddenly, and we have found a fairly high incidence of pneumonias among them. In cultures, we repeatedly have found coagulase-positive, hemolytic staphylococci. Sometimes other organisms are involved; the infant may have had meningitis, perhaps due to a drug-resistant organism.

"This program started in an effort to track down the cause of these deaths, after one mother became insane as result of her feeling of guilt over her child's death."

Surveillance

Though several surveillance procedures have been used since the program started, they have been discarded because they were retrospective ("we found out what had happened three and six months ago") or were apparently insensitive (there was an outbreak which was not reflected).

"Surveys were of value in the beginning," Dr. Russell said, "because there were physicians, good men, who said, 'We've always had infections; why all this fuss now?' They were really skeptical, and they had to be made into believers; but we've passed that phase of the program."

Now, in lieu of a formal surveillance method, the health department is using the reports of public-health nurses.

"A nurse gathers information on infections in her district and gives us a report, indicating, for example, how infection spread through a family," Dr. Russell said.

"These case reports are not surveillance in the true sense; they are simply an indication that the problem is still here. Once in a while we run into a doubter, and when we hand that sheaf of reports to him he has to admit rather quickly that infections are still quite a problem.

"We take these reports to each meeting of the infections control committee and circulate them around the table, so that everyone has an opportunity to learn who the patients were and what the circumstances were.

"The more definitive work, of course, is being done in the laboratory, where we are finding that some of the gram-negative bacilli and the enteric bacteria are beginning to turn up more often as the offending organisms."

The Orange County infections control committee, after three years of hard work, makes no claim of having conquered the infections problem. It does believe, however, that the hazards of infection in the hospitals are less than they were a year or two years ago, and that awareness of the problem is a major reason for this. That awareness is greater in Orange County than in some other areas of California was pointed out to Dr. Russell recently by a nurse who had worked in Orange County hospitals before the program had started, and after working in an area near San Francisco, had returned to Orange County.

The difference in awareness, observation of technics, control of visitors, concern of professional and subprofessional groups between Orange County and the other area was like the difference between daylight and dark, she said, adding, "You don't dispel organisms by changing your attitude, but you do change your habits by changing your attitude."

Chart used for recording results against specific organisms with various drugs and with different dilutions of each drug.

Chloramphonicol 5 ug/ml
Chloramphonicol 15 ug/ml
Chloramphonicol 15 ug/ml + Penicillin 1 u/ml
Erythromycin .5 ug/ml
Erythromycin 2 ug/ml
Kanamycin 5 ug/ml
Kanamycin 10 ug/ml
Kanamycin 15 ug/ml
Neomycin 5 ug/ml
Neomycin 30 ug/ml
Novobiocin 2 ug/ml
Novobiocin 5 ug/ml
Novobiocin 10 ug/ml
Oleandomycin .5 ug/ml
Oleandomycin 2 ug/ml
Penicillin .125 u/ml
Penicillin .25 u/ml
Penicillin .5 u/ml
Penicillin 1 u/ml
Penicillin 2 u/ml
Penicillin 5 u/ml
Penicillin 10 u/ml
Streptomycin 2 ug/ml
Streptomycin 15 ug/ml
Tetracycline 2.5 ug/ml
Tetracycline 5 ug/ml
Vancomycin 2.5 ug/ml
Vancomycin 5 ug/ml

Selecting a Director of Nursing Service

How to avoid a few problems

By Florence L. McQuillan, R.N.*

"A person, but more especially a woman in charge, must have a quieter and more impartial mind than those under her, in order to influence them by the best part of them, and not the worst. A person in charge . . . must exercise authority without appearing to exercise it."—Florence Nightingale.

In selecting a director of nurses, these words offer the administrator some very good guidelines. Obviously, the personality of the director of nurses is a most potent factor in promoting cooperative and harmonious relationships in nursing service. A woman who attempts to impress an administrator with her firmness instead of her fairness, who is too eager to assure him that she will not hesitate to exercise her authority, may be lacking in the essential know-how of personnel relations.

Every administrator considering an applicant for the position of director of nurses has a right to expect absolute frankness. In turn, the applicant should know what is expected of her in the position. (And she should have the opportunity to make rounds, to view the hospital situation for herself.) This mutual honesty at the start lays a foundation for a sound relationship between the administrator and the director of nurses.

Duties. The functions of a director of nurses will differ with each particular hospital. Her duties will vary, for example, if the hospital is a teaching institution in which she must assume responsibility for the education of nurses. They will vary if the hospital is a specialty institution. And they may also be affected by the size of the hospital.

In the average modern hospital the director of nurses is responsible for working out an administrator-approved staffing schedule, estimating the number of professional nurses, practical nurses, nurses' aides, and orderlies required for each service and during each shift. She is expected to develop realistic personnel policies in cooperation with the administrator. She should be capable of establishing a budget for her department, with administrative approval, and of conducting her department within the framework of that budget. In fact, she should be prepared to submit regular reports to the administrator concerning expenditures in her department.

She is expected to keep personnel records, time schedules, and accident reports. She should work with the business office regularly, checking the time schedule of members of the nursing staff for payroll purposes.

The director of nurses is expected to handle personnel problems and complaints relative to patient care with fairness and diplomacy. She conducts meetings and relays administrative directives to the nursing staff. She makes staff assignments and endeavors to coordinate the work of nursing service with other departments. And at all times she strives to promote loyalty and stability on the part of the nursing staff.

Beyond these basic responsibilities the director of nurses should be a professional expert, skilled in the various aspects of nursing. She should be capable of supervising the development of a procedure manual and of evaluating both the quality of patient care and the competence of supervisors, nurses, and auxiliary workers. She should understand the functioning and needs of each nursing unit. She should be able to introduce a staff educational program, and be capable of general supervision.

Qualifications. This listing of responsibilities provides us with clear insight regarding the necessary qualifications for a director of nurses. An effective director will have: (1) a wholesome and strong personality; (2) the ability to lead; (3) a sense of organization; (4) diplomacy; (5) integrity; (6) a sense of fairness; (7)

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loyalty; (8) good judgment; (9) enthusiasm for the work; (10) an understanding of hospital problems; (11) professional skill, and (12) a neat and well-groomed appearance.

Since the position demands a strong personality and a thorough familiarity with the various responsibilities, it is only fair that the administrator be ready to delegate these responsibilities to the director of nurses. Any accepted responsibilities an administrator does not wish to delegate should be made known before the director's appointment. (Examples might include the administrator's desire to have complete responsibility for the budget, or the necessity for him to approve personally every staff member appointed to the nursing service.)

On the other hand, a candidate for the director of nurses' position should be told if a hospital's policy calls for her to undertake additional duties beyond those generally associated with the position. (These might include charge of the drug room, emergency room, or admitting office.)

Choosing the director. Since so much depends upon gaining insight into the person being considered for the post, use of a special questionnaire for the applicants is suggested. It should be concise and should ask such pertinent questions as:

a) What do you regard as the major functions of a director of nurses?

b) As nursing director, how would you propose to stabilize your service?

c) How would you deal with insubordination?

d) How do you keep informed concerning advances in the nursing and medical fields?

Such a questionnaire, coupled with a well-conducted interview, is far more valuable in making a good appointment than a reliance upon references. Too often a reference is filled out by someone who has had no personal contact with the applicant, and the information may have been taken from an inadequate file or may be a result of hearsay. In contrast, personal contact, answers to a questionnaire, and personal credentials (license, educational records) are factors upon which an administrator can rely heavily.

During the interview, a check list can serve as an important aid also. The administrator can evaluate as "poor," "fair," or "outstanding" such points as: (1) appearance; (2) enthusiasm; (3) personality; (4) reaction to the hospital; (5) grasp of hospital problems; (6) ability to express ideas and (7) chances of working cooperatively with the administration.

Adjustment period. Once the selection is made, an adjustment period must follow. This period can be trying for both the nursing director and the administrator. It is always advisable for the director who is relinquishing her post to remain on to help her successor through the first week or two.

When this is not possible the person next in rank should assume the responsibility of indoctrinating the new director to department routine. Here, however, is an element of danger an administrator must be aware of: it is not at all uncommon for a person who has been second in rank to harbor serious resentment toward someone appointed from the outside, even when the assistant has expressed no desire to be advanced to the top position.

Obviously, a new director of nurses has a difficult time becoming oriented in the face of an assistant who is hostile and uncooperative. Indeed, she is in a most unfortunate situation. If she goes to the administrator she runs the risk of appearing unable to keep a member of her staff in line. But if she takes a firm stand with the person involved, she is in danger of arousing tension and suspicions on the part of the staff.

The administrator's office can help combat this problem by assigning someone from administration to work closely with the new director. An administrative assistant can judge how much help the new director is receiving and can also give assistance with various administrative procedures. The person assigned to this task should meet with the administrator and the director of nurses to determine how the orientation period is going. This provides the new director with an open invitation to speak frankly and to seek help if she needs it. If she is having difficulty, it relieves her of contacting the administrator to complain. It is also good for the nursing staff to know from the start that the director is in close contact with the administrator and that she has the backing of administration.

Once a director of nurses has been selected, and her responsibilities have been agreed upon, she should then be free to carry out her duties. Since her appointment followed careful consideration, and because her background indicated administrative ability as well as professional competence, she should be able to relieve the administrator of many problems and decisions. If she cannot be relied upon to do this, it must be conceded that a wrong selection was made.

Filling the post effectively. The director of nurses' influence within her department will be reflected most often in the staffing picture. A director who is exerting a wholesome influence upon her staff will generally find that absenteeism and staff turnover diminish under her direction. When the staffing picture deteriorates, one can usually—and with justification—look to the director of nurses for the answer. She may be extremely domineering. Or she may lack firmness, or have failed to be consistent in dealing with personnel problems.

I recall one situation in which a director of nurses established a new policy to overcome flagrant absenteeism. She announced that anyone absent two days without calling the nursing office would automatically be dismissed from the staff. The announcement was met with respect because she explained her position to the staff, pointing out that the dependable members were often carrying a double work load to make up for the few who refused to uphold their responsibilities. With considerable diplomacy she added that the situation could not continue without the danger of the hospital's losing its most reliable people, and that, therefore, she had decided to take forceful action.

The following week two aides were dismissed as a result of the new rule. The action was generally regarded as just; and, significantly, absenteeism dropped to an all-time low. Everything went well until a month later when a registered nurse remained off duty three days without notifying the nursing office. When she returned on the fourth day she was given a stern rebuke, but was allowed to return to her service.

(Continued on page 55)

New Electronic M

Automation, an increasingly absorbing subject for the hospital and industrial fields, is gaining added impetus from new knowledge, some of it the outcome of research on reactions of space pilots.

Two of the new monitoring systems are currently being introduced to hospitals. One, the Gulton Hospital Monitor, is the result of two years of research for the United States Air Force on equipment to measure and transmit the physiological responses of aircraft and space rocket pilots to conditions of zero gravity or weightlessness.

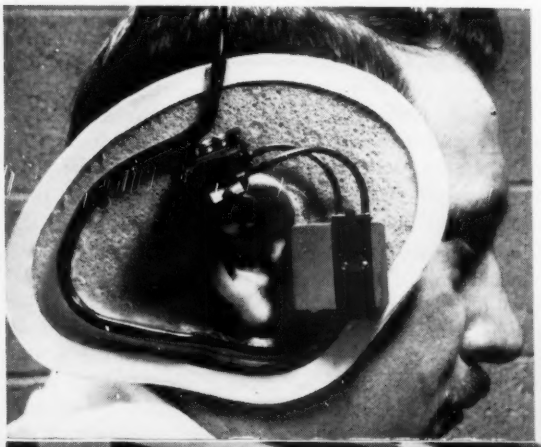
The other, the Body Function Recorder, was developed by the Heiland Division of the Minneapolis-Honeywell Regulating Co., with the cooperation of medical authorities and technical experts at the Mayo Clinic in Rochester, Minn.

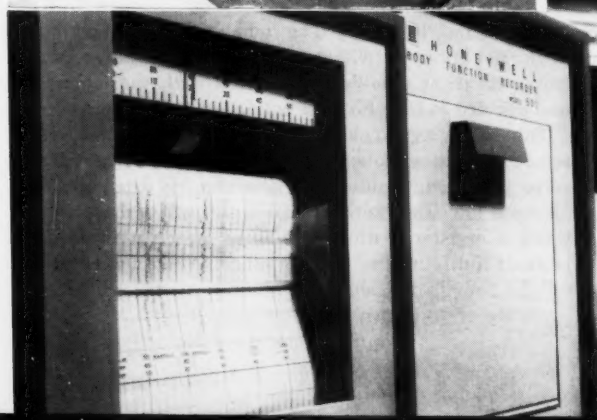
Operating functions and details of both monitoring systems are described in the following material.

Gulton Hospital Monitor

This advanced electronic monitoring system from Gulton Industries, Metuchen, N. J., is capable of continuously checking 10 physiological functions of 20 patients, and sounding an alarm when a change in a patient's condition exceeds limits set by the physician.

The monitoring system presently being tested in the recovery room of the National Cancer Institute, Bethes-





Left: A clothespin type of transducer clipped to the patient transmits a real "earful" of medical information to the new Minneapolis-Honeywell electronics system that automatically monitors the condition of critically ill and postoperative patients.

Below: By shining a light through the patient's ear onto a photocell, the clothespin measures diastolic and systolic blood pressures and pulse rates. Also monitored and recorded with the Body Function Recorder is temperature and respiration.

Monitoring Systems

da, Md., keeps a continuous record of temperature, pulse, blood pressure, breathing rate, and blood oxygen. The more advanced system now being offered to hospitals can also measure EKG, EEG, respiration volume, audible heart beat and galvanic skin response.

Costing approximately $50,000 for a four-bed, five-parameter unit, the manufacturer lists the following built-in advantages:

1. Precise information, easily read: simple to use because it delivers its information in digital form, in precise numbers, making it unnecessary for the nurse to interpret meters or instruments.

2. Complete permanent record: all measurements of physiological functions, plus the patient's identification number and time of reading, are automatically printed at the central station on a paper tape, in the same manner as a cash register tape. This can be torn off the printer and placed on the patient's chart to form part of the permanent record.

3. Self-checking device: an electronic test 'patient' built into the central station makes a continuous and automatic check on correct functioning.

4. Two automatic alarms: upper and lower limits, determined by the doctor, may be set into the system for the function of each patient, indicating the area within which the patient's condition may change without requiring the nurse's attention. Any measurement exceeding the set limit automatically triggers the audio-visual alarm, sounding a bell and flashing a light. The alarms, which make it unnecessary for a nurse to be in constant attendance at the central station, also guarantee immediate attention in a sudden emergency situation.

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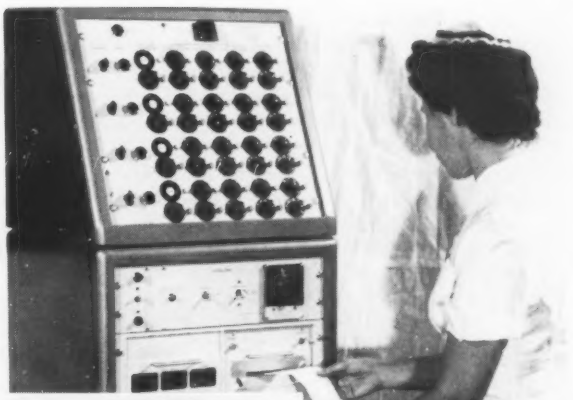


Right: At the central station of the Patient Monitor, designed by Gulton Industries, a nurse reads from a cash-register-like tape on which five physiological functions have been measured and recorded.

Below: Patient wears easily installed and comfortable sensing device which brings data into central station. The device standardizes, transmits, and amplifies signals to the bedside station or relays it to the central station.

5. Full automaticity: automatic switching, a time-saving convenience, brings data into the central station from each patient in rapid sequence.

6. Patient comfort: each of the miniature sensing devices can easily be installed on the patient's body.

7. Maximum flexibility: designed so that a unit can monitor from four to 20 patients, measuring from one to 10 physiological parameters of each. The central station, which may be stationary or portable, can be linked to printers, closed-circuit TV, tape recorders, automatic chart makers, data analyzers and other advanced equipment increasingly being used by the medical profession.

The Gulton system is composed of three elements: a sensing device, a bedside substation and a central station. The sensing device is attached to the patient's body. The bedside substation receives electric signals from the sensing devices, and standardizes, amplifies, and transmits the signals by connecting wires. The central station is the area to which the substation transmits patient data. The record on each patient is continuously visible at the central station and is automatically printed there. The central station also has a set of knobs for each patient, used to set the limits within which the patient's function may safely vary. Any exceeded limit triggers the audio-visual alarm.

Reported to be an important new tool capable of relieving doctors and nurses of a substantial amount of routine work, the Gulton monitor at the same time should improve patient care by alerting the nurse at the very moment she is most needed.

Body Function Recorder

Included in a new line of electronic medical systems developed by the Heiland Division of the Minneapolis-Honeywell Regulator Co. is a monitoring system called the Body Function Recorder.

Of principal interest to hospital administrators, the system is designated for use on critically ill, postoperative, or intensive care patients, rendering instantly readable and permanent records of the patient's condition.

Every two minutes . . . automatically and simultaneously . . . the Body Function Recorder measures and records temperature, pulse rate, respiration rate, and both diastolic and systolic blood pressure of from one to a dozen or more patients.

"My daughter is marrying a doctor, and I want the service to be read, 'Do you take this woman and all her relatives to care for in sickness and in. . .' "

Utilizing two major components, the headpiece contains three transducers connected to a necessary circuitry to provide the five measurements, and a recorder alarm system unit that produces a permanent visual record of measurements and monitors them continuously to detect dangerous trends. The high and low limits of each of the five variables are independently preselected and can be changed at any time without disrupting operation of the equipment.

Transducers affixed to the patients do not require subcutaneous probes or catheters, do not interfere with normal body movements, or functions and, according to the manufacturer, can be worn without discomfort for long periods.

The three transducers are:

1. The blood and pulse transducer, a "clothespin" type earpiece that slips lightly over the upper portion of the ear; a headband for holding the earpiece in place; and a padded cup enclosing the entire ear to hold the transducer firmly.

2. The temperature transducer, a small clip inserted into the corner of the mouth and containing a temperature sensing element, which is pressed against the side of the cheek.

3. The respiration transducer, an air detector about the size of a silver dollar, positioned in front of the mouth under the nose, held by light pliable support.

4. The blood pressure and pulse rate transducer, picking up diastolic and systolic blood pressure via cells in the ear. Changes in the amount of light coming into the photo cells, indicates when the diastolic and systolic pressures have been reached. Pulse rate is obtained by counting the beat-to-beat variations in the amount of light coming into the photo cell.

When the Body Function Recorder's measuring and recorder alarm units are combined into a portable cabinet, the system can be moved from one bedside to another, and can be operated on ordinary electric current capable of supplying a 200-watt lamp.

There is no limitation to the number of patients that can be monitored from a central station, although the control system and patient measuring units cannot be separated by more than 500 feet.

Adjacent to the strip chart recorder, and equipped with red and green lights, the alarm and control panel indicates the condition of each of the five variables. The green light indicates that the function being measured is "within limits"; the red, that it has exceeded safe limits. Neither light is on when a particular function is not being monitored (it is not necessary to monitor all five variables but only those deemed desirable in view of the patient's condition).

Cost of the Honeywell Body Function Recorder is approximately $7500 per patient. The manufacturer does not claim that installation in a hospital would pay for itself in the reduced amount of man-hours saved. On the contrary, the contention is only that the purchase of the recorder would have the effect of improving patient care, not only by providing more frequent, accurate, and permanent records of the conditions of critically ill patients, but in freeing skilled nursing personnel for more exacting tasks than entering and plotting graphs of patients' conditions.

Press Conference—Smash Hit or Bust?

By John H. Smith, Jr.*

I never knew an editor who liked press conferences. I never knew a trustee or administrator who approached a press conference with a calm stomach. And I never knew a public relations man who considered a press conference easy to stage.

Why, then, don't we public relations men put the press conference in mothballs and return to the joy of contacting editors on an individual basis? For three reasons. Because more outstanding stories continue to come out of press conferences than from any other source. Because the people we represent and the newspapermen get to know each other better this way. And because the effective production of a press conference is one of the largest and most visible examples of the public relations man's art.

If there were a Walter Kerr of the press conference circuit, I suspect that he would label few of these conferences "smash hits"; most of them would be "adequate." A press conference is never a complete bust unless no one shows up, or no one writes anything as a result, or those who do come decide they won't bother the next time. Such things can happen, but fortunately they are rare. Most press conferences, if handled right, do the job they are supposed to do.

Expert timing is a half-hidden quality of a superior press conference; and this involves an element of preparation. When is the proper time to hold a press conference? My somewhat evasive answer is whenever you have something *especially* newsworthy to describe or demonstrate, so long as you haven't done a similar show too short a time ago. The problem is in deciding what is especially newsworthy—and this does *not* include a vague prediction about hospital usage by an administrator or trustee; nor an increase in the number of your trustees, unless there are newsworthy reasons for it; nor a new piece of equipment that can be understood only by nurses or technologists. You are justified in taking an editor's time with a press conference only when the subject is of such logical interest to his audience that he ought to be there to see how it works, to get the facts first-hand and ask his own questions.

A record year in usage or expenses can be such a subject, particularly if the increase is sharp and the reasons for it portray a progressive twist in operating technics or a new trend in community health needs. The introduction of a new product of research and development is a natural excuse for a press conference, if it can be related to patient care or services. The accession of a new chairman of the Board of Trustees is a press conference event if there is some other reason to justify it. If the change signals the beginning of a substantial shift in hospital policy, for instance, then you have a press conference. And, naturally, you have one if Dwight David Eisenhower accepts a trustee's post at your hospital.

Actually hospitals, fund-raising organizations, and universities have more opportunities to stage press conferences on the basis of personalities than do business corporations. The capabilities of a hospital administrator new to the area are a thing that many editors want to measure. And the most newsworthy item about your hospital this year may be why some squire of your community considers it worth a $2 million donation.

Among other logical subjects of press conferences are these: a new discovery in science or medicine made in your institution; the opening of a new wing; the presentation of an award for significant achievement; the launching of a capital gifts campaign—but only if you're willing to preview the end results of the gifts at the same time; the announcement of a substantial cut in patient costs; the beginning—and the end—of a labor

The author, vice-president of Howard Chase Associates, New York public relations consultants, is a past-president of the American Public Relations Association and has been a newspaperman, director of promotion for *U. S. News & World Report*, public relations director of the National Association of Broadcasters, manager of corporate public relations for Chrysler, and chairman of the plans board of Communications Counselors, Inc.

*Vice-president, Howard Chase Associates, New York City. This article is adapted from an address before the Long Island Public Relations Association.

dispute; the setting of a speed or economy record in some phase of your operations or care program.

And yet it is necessary to temper most of these with the self-examination of "When did I do it last?" Did the gentlemen of the press accept my refreshments just a few weeks ago? Will they get the idea that I am trying to make news by setting off flares; that I'm demanding too much of their time for what they think I have to deliver?

Sometimes things break in such a way that you'd be a fool not to have a press conference again even though the last one is still rather fresh in the memory. This happened to us at Howard Chase Associates a couple of years ago with one of our business clients—a leader in the forest products industry with general headquarters on the west coast. We had just staged this company's press conference in New York. The theme was the company's plans for using a few million board feet of prime timber it had acquired in a contest with a competitor. Everything worked well; the press turned out in numbers and the ink flow was excellent.

Two months later, this company discovered that it had set all-time highs in every black item on the balance sheet. This calls for another celebration, said the chief; call back the press. We couldn't do it. There wasn't enough new to say to the press. So we decided to recommend a luncheon for security analysts—a special kind of audience—and just casually ask a few press people if they would like to sit in. They did, and the clippings were impressive again.

If you're ever caught in a similar situation, remember there are more ways to stage a press conference than merely to hold one. Perhaps you could put on a fashion show with nurses as models; or a dietetic demonstration; or a dramatic production on stage by the medical staff; or a seminar in conjunction with a local high school or university; or an exhibit of original art by doctors and dentists.

Yet, it's more than just fitting the subject to the occasion that comprises press conference timing. The second point to remember is to time the news to the meeting. The stories in the press should emanate *from* the press conference, not precede it. If you are hoping for a break in the morning papers or the afternoons, this means you have to time the press conference to correspond to the deadlines of such papers. This, more than decor or somebody's taste, should determine whether to serve breakfast, lunch, or canapes at the conference.

Don't worry too much about when the news is released after you have the reporters there. I have known public relations men to suffer nervous breakdowns trying to decide whether to put the releases on the chair or hand them out as the visitors leave the room. If some correspondent is enterprising enough to sneak from the room and make a phone call to his paper, the chances are that the story is good enough for the others to pick up too. And a reporter is jaded enough about speeches and announcements that no edge of delight is going to be removed by having a script to follow and mark up while the spokesman is talking.

So much for timing. Now what about the physical production of the big event itself? An important point is: remember why you're doing it. Most times the press conference's purpose is not just to release a story (messengers and mail are still pretty good for that) but to enable editors to know and talk directly with people from your hospital. So implement this purpose. Have a short reception line to introduce key people as the guests come into the room. Brief speakers in advance on what kinds of questions the press is likely to ask and what kinds of answers they expect. Spread spokesmen out at various tables so that they sit with editors rather than face them like a waxworks. And, wherever possible, arrange your furniture and floor layout in a U shape and encourage your main speaker to move around within the U for a feeling of closer communication.

Make your press conference add something to the story you have already turned out on the mimeograph. An editor who accepts your invitation is entitled to some dividend the postman couldn't have brought him. There are a number of ways of paying this dividend. You can show the audience a piece of equipment in action, making the static come to life. You can let the editors try out something, such as operating a new call system or taking an ambulance on a spin around the block. You can dramatize financial statistics on a slide film.

A hospital or charitable organization can bring to the audience's attention the real meaning of its services to actual cases. One of our clients, a New England university, launched a fund drive recently. The news release told the story of the distribution of the money, but we advised the administration to use the press conference to show tangible representation of what this capital enlargement will buy in a program of "commitment to excellence."

The question of whether you should serve drinks at a press conference is really not important. I don't think the results of your show will be measured by refreshments. On the whole, it's the menu of news and not of food-and-drink that determines the success of the conference. The important item about refreshments is to keep them under control. You decide when service will stop, and you time the buffet supper and the lunch to be certain it doesn't consume too much of the writer's or broadcaster's day.

Have plenty of informational materials available at the press conference. The text of formal remarks is mandatory, of course, as is a release on the major story. But you might want to furnish maps and pictures also. You might want to distribute fact sheets, catalogues, annual or quarterly reports. You might find it feasible to fix a table with outlines for feature stories and copy for filler items or short radio inserts.

Make it as easy as possible for the guest to develop a story. Seat him somewhere where there's space for writing and give him a sharp pencil and a note pad. At a Washington conference I supervised one time, we took advantage of a reporter's inclination to write on the back of an envelope; we gave him an envelope with information materials in it and fixed up the back of the envelope as a memorandum form.

You may want to provide taping facilities at the conference for the radio broadcasters and camera services for the TV men. You can ascertain these needs when calling around for reservations before the conference—which, incidentally, brings up the important topic of getting the press out. Usually, I find a written invitation, followed by confirmation by phone, is the best technic. You can tell something of the importance of the conference in a letter without giving away the full details. It's a logical extension then, to call invitees to confirm their reservations. In fact, this will often result in a larger crowd, not only because of the personal touch but because those who can't come will ask if it's all right if they send a substitute. Beginning with a letter rather than a phone call will save your time. In addition, it reaches all members of the press simultaneously. A telegram is better than a letter—if the news is really hot—because a wire guarantees attention.

Don't tell too much in your invitation but, at the same time, sell attendance! If you honestly feel you have a major development or breakthrough in scientific progress, say so. But be certain your news will stand the test with a rather hard-bitten crew or you won't draw a crowd the next time.

If it's a question of how many publications and stations you should invite, I would lean toward including all the marginals. You never know what editor or commentator is going to get a new idea about your hospital based on something which crossed his desk the other day—or something he heard from his wife at the breakfast table.

There is a certain bonus in numbers at press conferences. I have known cases where magazine articles on completely different subjects were sparked by casual conversations. The fellow with the smallest circulation may give you the most favorable article for reprint purposes. The most disinterested clod in the group may be mentally piecing together a sweeping story that will one day appear in a major magazine.

One area of press conference planning that is sometimes completely overlooked is the conference's aftermath, the follow-through. Almost every good press conference turns up clues with which the creative-minded PR detective can work. A reporter asks a question that wasn't on the agenda, thus revealing a track that his publication is exploring. A television emcee shows particular fondness for the chief-of-staff's personality—and you happen to know of an unusual hobby this physician practices. An editor tells you something about what another institution is doing and it suddenly strikes you that you can work a natural tie-in with it. If you can keep someone free enough of the details to roam about and talk and pick up these hints, you can develop a most productive schedule for the hospital's information staff in the weeks immediately following.

Further, the open elbow-rubbing of a press conference can be used to book personal interviews, to arrange helpful golf dates, to get pictures for direct-mail use, to advance someone for a future speaking engagement, or to plant a quote on a current issue in the news.

As another item in follow-through, it is often wise to prepare a thank-you note to those who bothered to show up. Such notes should be short, friendly, different

(Continued on page 55)

Hadassah-Hebrew University Medical Center Moves to New Quarters

By Malka Hillel Shulewitz*

A long-awaited moving day came June 6, 1961, for the Hadassah Medical Organization in Jerusalem. Patients were transferred to the new Hadassah-Hebrew University Medical Center, which stands on a plateau overlooking the ancient monastery village of Ein Karem, birthplace of St. John the Baptist.

*The author is in the information service department, Hadassah Medical Organization, Jerusalem, Israel.

The day was hot and dry. With the expert help of the Israel Army Medical Corps, some 200 patients were transferred to the new center between 7 a.m. and 12:30 p.m. The operation was carried out with military precision, and the patients—some of them traveling with oxygen flasks—were handled with tenderness and care. By lunchtime, they were in their new, spacious rooms overlooking the hills of Judea.

View of room in radial-design unit, planned for care of seriously ill patients. Unit is divided into eight-bed (two-room) suites, each with its own nursing station.

Wide lounge-corridors in the "follow-up" unit give convalescing patient a place to walk around and relax outside his room.

For 13 years the center had operated under difficult conditions. After the first center had to be evacuated in 1948, during the Israeli-Arab war, the work of healing, teaching, and research continued in a series of buildings, scattered in different sections of Jerusalem. The Bible Society provided a roof for the Hebrew University Hadassah Medical School, which has graduated 500 doctors since 1949; the nursing school found a temporary haven in St. Joseph's Convent; one of three hospital buildings was rented from the Anglican Church.

But temporary conditions could not be tolerated indefinitely. Thus in 1952 the Hadassah Medical Organization decided to build a new medical center. The initial blueprints were submitted by architect Joseph Neufeld the following year.

Construction began in 1956. The building became an important economic enterprise in Jerusalem, employing hundreds of workers, many of them new immigrants who became skilled on the job. Millions of pounds worth of materials were ordered from Israel factories. Many commodities, such as the automatic windows and large kitchen utensils, were manufactured there for the first time.

The new hospital accommodates 500 beds, spread out in wards with tremendous windows which let in plenty of light. The radial-design section, specially planned for the concentrated treatment of seriously ill patients, is divided into eight-bed (two-room) suites, each with its own nursing station.

The "follow-up" unit, in the long section of the hospital, was planned because of increasing numbers of ambulant patients and new attitudes toward convalescence. This unit has wide lounge-corridors on either side. The patient transferred to it from the acute unit need travel only across a corridor. He can enjoy greater self-reliance and sociability, yet remain readily accessible to the doctors and staff following his case.

The outpatient department on the ground floor can deal with 200,000 cases a year. The modern laboratory and therapy facilities serve both out and inpatients

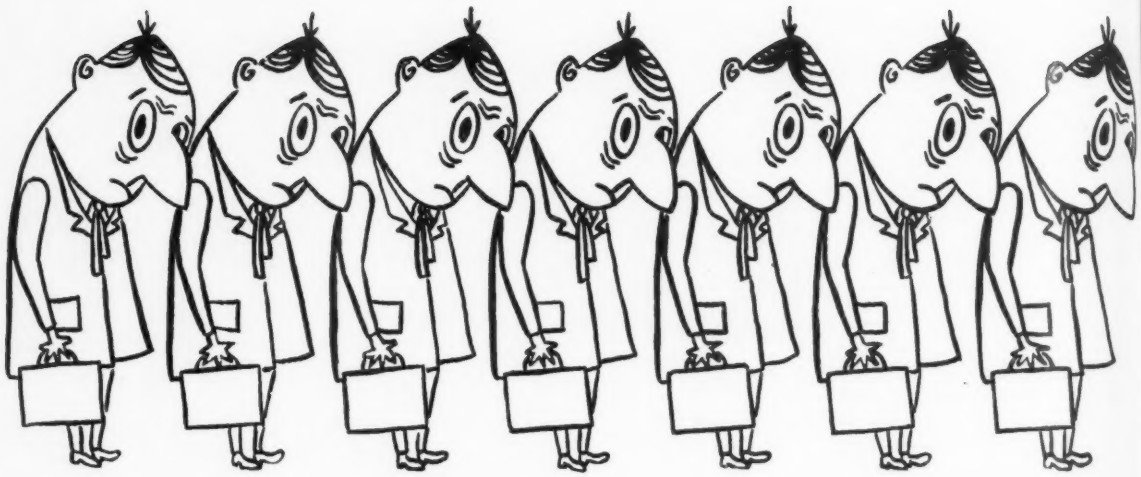
The kitchen features a central tray service. Food trays are taken on electrically-heated wagons which are carried by lifts to the floors. The nurses on duty distribute them to the patients—hot!

Clinical, diagnostic, students' and experimental laboratories are linked to the medical school on one side and the hospital on the other.

Included in the center are a synagogue, already renowned for the Chagall stained-glass windows that will later grace its interior; the administration building for the Hadassah Medical Organization; and a nurses' school and residence for 150 students. The schools of medicine, dentistry, and pharmacy and the Mother and Child Pavilion are in the process of construction.

David T. Tarlow, administrative and financial adviser to the Hadassah Medical Organization, receives the thanks of Bedouins in Jerusalem for the Hadassah Hospital's contribution to the improvement of medical care in the Middle East.

Mr. Tarlow is a consulting editor for HOSPITAL TOPICS. Below right: TOPICS' roving consulting editor Tarlow greets entertainer Sophie Tucker, her son (standing behind her), and her brother on their recent visit to the Hadassah center.



EXECUTIVE SUITE

By Alfred K. Allan*

The businessman, a top executive at a large company, settled back into the deep cushion of the easy chair in a luxurious seven-room suite, complete with wall-to-wall carpeting, plush furniture, a kitchen, two bathrooms and two bedrooms. Not too unusual? No: except that these delightfully comfortable surroundings—which our executive is sharing with another high-paid top man from a large company—are not in an apartment house or hotel, but at New York City's Roosevelt Hospital.

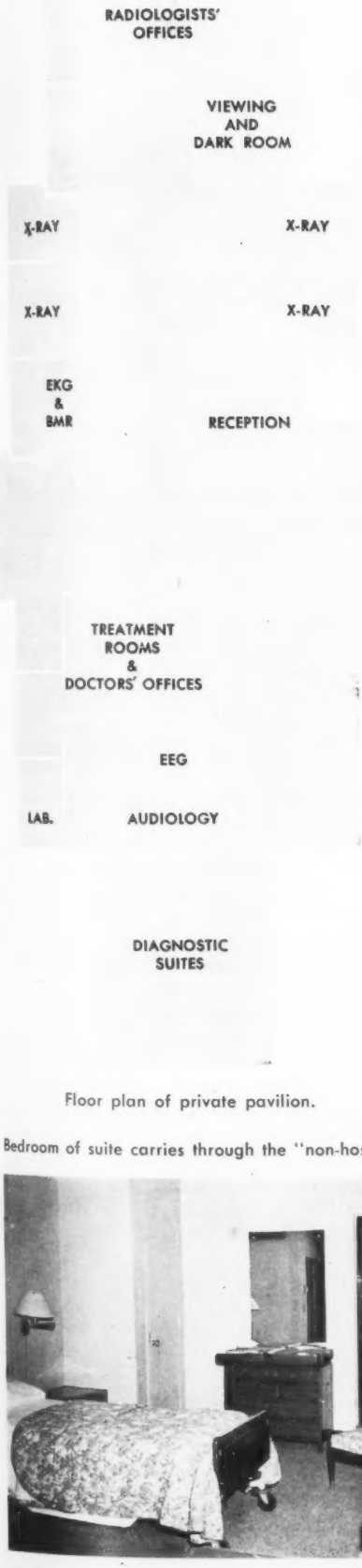
This is all part of the hospital's program of private diagnostic suites for the accommodation of leading business executives when they come to the hospital for their periodic health check-ups. The suites provide executives with all the comforts of home and make the check-ups just as easy and pleasant as stopping off at a hotel. Gone are the hospital odors and atmosphere for these patients—a real boon for executives who want medical exams but are wary of the hospital environment.

Grouped together in the executives' private pavilion are diagnostic services, with everything necessary for complete examinations, including a full clinical laboratory, and radiographic, physiological, medical, electroencephalographic, and audiological facilities for members of its medical staff. The hospital believes that such a group of facilities is good economics as it is impossible to amass the necessary skills, equipment, and materials in any setting which does not make continuous use of them.

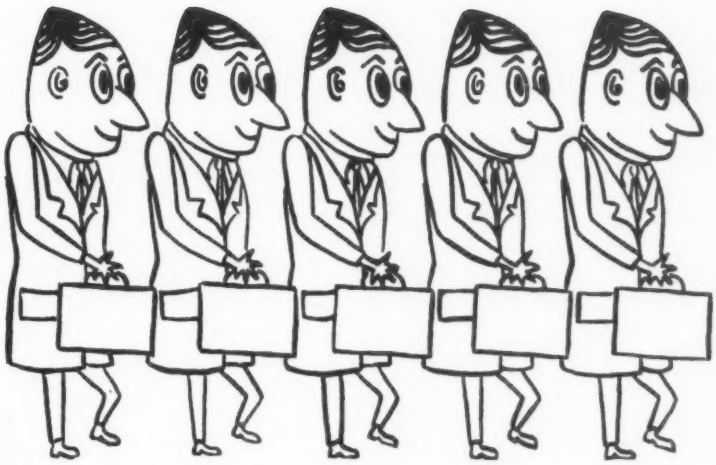
Roosevelt Hospital's "executive" program was launched in 1950. Presently participating are such giants of industry as RCA, American Steel Foundaries, U. S. Industries, and many others. As Peter B. Terenzio, the hospital's administrator, explains: "Following World War II these corporations realized that their biggest asset was their top executives. Having them get periodic checkups would be to the company's advantage. Within the last two years this idea has really caught hold. Now most of the big companies have a program of this type."

*Free-lance writer.

Living room photo of Roosevelt Hospital's executive suite shows relaxed but gracious accommodations, adaptable to whatever activity the executive is engaged in.



Floor plan of private pavilion.



Here's the procedure the companies follow at Roosevelt:

First they select a physician from the hospital's medical staff, one who is connected with this kind of program. The physician and the company review the specific needs of the corporation, taking into consideration the age grouping and occupational environment of the company's executives. Then they draw up a mutually convenient plan.

The examinations are conducted on an inpatient or outpatient basis. Outpatient exams cover two or three visits to the private diagnostic service for examination by the doctor and completion of diagnostic tests. Inpatient examination runs from two to four days; during this time the executive lives in the private suite. (Last year the program handled 250 outpatients and 5,000-8,000 inpatients.)

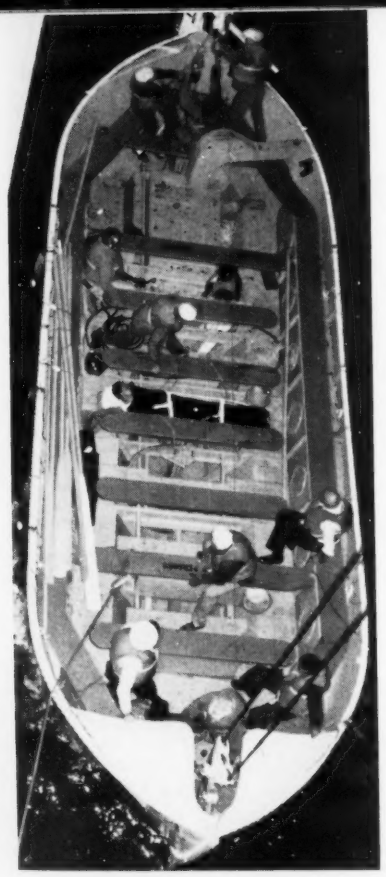
Everything is geared for the greatest possible convenience of the executives. They carry on their regular work in the suite. They receive business and personal phone calls, bring in their secretaries for dictation, receive visitors, and play chess or bridge. There's even one executive who brings his butler to the hospital with him to prepare his meals.

In addition to top executives, those privileged to use the private suites at the end of the hall have included such noted people as the Duke and Duchess of Windsor and a shah of Egypt.

When the examination is ended the doctor discusses his findings and recommendations with the executive and, when asked to do so, forwards his findings to the executive's personal physician.

Mr. Terenzio feels that by maintaining its pioneering private diagnostic service Roosevelt Hospital is "meeting a significant preventive medical need of business and industry. The experience of the past ten years has demonstrated the effectiveness of the diagnostic program as a health-maintaining . . . and sometimes life-saving . . . instrument. The enlargement of the service is the mute but substantial testimony of its acceptance as a management development technic by progressive corporate enterprise."

Bedroom of suite carries through the "non-hospital" theme.



Transferring an injured seaman from the Yugoslav tanker *M/V Piran* to the S. S. *Cleveland*, by lifeboat.

Above: Close-up of the lifeboat, where the *Cleveland*'s physician, Dr. F. B. Galbraith, is directing removal of the seaman to the American ship.

Below: In the *Cleveland*'s 13-bed hospital ward section, the seaman is resting comfortably; and Dr. Galbraith, who has doffed his life-jacket, seems more comfortable too.

Medical Care On Shipboard

By Margaret K. Schafer*

"Bon voyage," and "heigh, ho, on the bounding main" may connotate visions of vacation and leisure to some, but to the medical-care personnel of a ship this means that their work is just beginning. Typical of the excellent medical, nursing, and emergency care offered on shipboard is that of the *S. S. Cleveland*—one of the American President Lines' ships sailing to the Orient.

Aboard the *Cleveland*, one physician, three professional nurses, and one male hospital attendant provide the essential medical care for about 1,000 people—ship's crew and passengers. Office hours are held daily for outpatients, but emergency calls are made to patients' rooms when necessary. If required, hospitalization is provided for in the 13-bed hospital area. (The ship's hospital includes an operating room, 13-bed ward, and complete sterilizing room. All sterile supplies, including syringes and needes, are sterilized in the autoclave.)

Besides the hospital and "sick-calls," the ship maintains a well-baby infant nursery, where a nurse is on duty. Here children younger than two years may be left during luncheon and dinner, and until 11:30 P.M.

In addition to caring for the ship's population, calls are sometimes received from other ships requiring emergency medical care. Such a call was received on the *Cleveland* at 10:30 P.M., March 15, from the Yugoslav tanker *M/V Piran*, regarding a seriously injured seaman.

The *Cleveland* promptly arranged rendezvous at sea with the *Piran*, meeting her at 2 A.M. The ship's physician, Dr. F. B. Galbraith, boarded a lifeboat headed for the *Piran*. There he found that the injured man had a deep cut on his heel and required care beyond first-aid. So the seaman was transferred by lifeboat to the *Cleveland* and was given emergency blood-transfusions and surgical treatment.

It was a modern "rescue at sea"—but all in a day's work for the ocean-going medical crew.

*Formerly nurse consultant, Division of Hospital and Medical Facilities, U. S. Public Health Service; chief nurse, health office, Federal Civil Defense Administration.

Many a mother (and father, too) is relieved by the care offered for both well and sick infants in the well-baby nursery on shipboard. Mrs. Ellen Merrill, R.N., cares for the younguns.

Here one of the ship's three professional nurses, Jean Bongera, R.N., is checking the operating room equipment in the Cleveland's hospital section.

And Margaret Clause, R.N., who is head nurse of the Cleveland, is busy checking hospital supplies.

Another Opinion On Central Piping Systems

An abstract of a paper presented at the Tri-State Hospital Assembly by Edward Vogel, director of technical services, Liquid Carbonics Co., and concerned with central piping systems, appeared in our June issue on pages 30 and 31.

Some of the statements made in the presentation have been sharply challenged by J. C. Reid, assistant medical sales manager, National Cylinder Gas Co., Chemetron Corp.

In the interests of presenting both opinions, Topics is glad to print Mr. Reid's comments in full:

"Mr. Vogel makes the statement that 30 to 40% of all piping systems in use today are inadequate and that the inadequacy is due to poor planning and hastily constructed units. There is, of course, a question as to what would be considered inadequate but in fact it is our observation that there probably is less than 1% of all installed pipe systems that are not being utilized for economic return on the investment. We would hazard that this small percentage probably is attributed almost exclusively to defect in original installation. It is our further impression that more than half such systems presently unused could be economically repaired.

"We certainly do not agree that any 30 to 40% of all installed piping systems can be classed as inadequate, nor that the planning for such systems has been in any sense poor. To the contrary, we are of the conviction that hospital personnel, in association with their architect and engineers (and in the case of existing hospitals because of the interest and effort of individual maintenance staff), that planning for utility and maximum use of available funds has been nothing short of remarkable. Had it not been for outstanding achievement in this field the economic case for piped services could not have stood the test of time.

"For specialized uses it could perhaps be said that some hospitals have regretted installing piping in limited areas, but many such problems can be worked out through the use of double adaptors.

"There are a few hospitals that have considered and rejected piped services in emergency corridors for possible use in disaster; skipped piping of maternity floors; eliminated piping service in operating rooms because of special arrangements with the department of anesthesiology, etc.

"Seldom, however, was this a matter of poor planning, but rather of the maximum utilization of available funds.

"We agree with Mr. Vogel that compliance with NFPA specifications are important to the future premium rate to the hospital, and we agree that on occasion some small variances are noted. But, we wonder if a poll of hospitals would reveal very many being assessed at an up-rated premium. In the case cited by Mr. Vogel, the system could well have been installed before the NFPA regulation on the valve on the main was promulgated. The specifications excepted those cases since there previously existed a difference of opinion as to whether it was more important to be able to turn off the entire supply in the event of fire and take the chance of depriving all patients without notice. The 1956 decision was to install the valve on the main, but to continue section valves on each lateral so that an area of difficulty could be isolated."

Pneumatic Tube, "Trayveyor" Systems Speed Ope

By David H. Hitt*

During the past several years, the number of patients entering U. S. hospitals has grown from a trickle to a torrent. Administrators and medical directors, confronted on one hand by increased public acceptance of hospitals and consequently greater utilization, and on the other by advances in the healing art that have resulted in additional patient services, are constantly faced with the need for more personnel and more adequate systems and methods.

The need for efficiency in the utilization of personnel time is dictated by two considerations: first, the effectiveness of the enterprise depends on expediency, and second, the managers of most hospitals feel strongly committed to giving the patient the maximum value for the hospital dollar. Today it is generally agreed there is a close relationship between working efficiency and the speed with which paperwork and supplies move within the hospital. The real question is not whether mechanization of these operations pays off, but rather what type of mechanization, carried to what extent, will produce the maximum benefit. Our experience may shed some light on these questions.

*Associate administrator, Baylor University Medical Center, Dallas.

Left: Food trays for patients in Baylor's 250-bed Women and Children's Hospital are made up, assembly-line fashion, along the belt conveyor.

Right: The trays then travel past the dietitian and through the "window" into a "Trayveyor" that carries them to the bed floors. It takes only about 4½ minutes to load and deliver each tray.

Operations at Baylor

Airtubes move a veritable mountain of paperwork each day, as well as carrying the bulk of all prescriptions to pharmacy. Delivering prescriptions via pneumatic tube is at least twice as fast as carrying them on foot. In addition, in those nursing areas where tube stations have been installed only recently, it is generally agreed that result has been a noticeable improvement in working efficiency.

In Baylor's 250-bed Women and Children's Hospital, opened in the fall of 1959, a selective vertical lift delivers all central supply room orders to each of the six nursing floors. Meal trays move along a belt while being prepared, travel to each floor on a vertical "Trayveyor" system, and then are carried to each patient by "tray girls." In addition, each day a pneumatic tube network moves a veritable mountain of paperwork within and among the three hospitals that comprise Baylor University Medical Center. (These include, besides the Women and Children's Hospital, the 436-bed Truett Medical and Surgical Hospital and the 90-bed Minnie S. Veal Teaching and Research Hospital. They comprise the eleventh largest medical treatment facility in the nation, in terms of anual admission.)

Our pneumatic tubes** consist of five interconnected lines and 35 sending-receiving stations. Communications can be sent between any two points simply by setting the proper code on two sliprings located at one end of the carrier. All nursing divisions are reachable via the "Airtube" system, as well as diagnostic, therapeutic, administrative, and supply departments.

Airtubes carry the bulk of all prescriptions to our pharmacy, and deliver the drugs to the nursing unit after they're prepared. Usually less than ten minutes will elapse from the time the order leaves the nursing floor until the medication arrives via tube at the nursing unit. We estimate, conservatively, that delivering prescriptions via pneumatic tube is at least twice as fast as carrying them on foot.

The ubiquitous air-propelled cylinders also deliver charge slips to our business office from throughout the hospital; transmit information concerning new admissions, room changes, and discharges, to a central file maintained at our main switchboard; transport patient case-records; handle most inbound and outbound mail; carry discharge slips from the nursing floors to the cashier's desk; and convey requests for a variety of laboratory and radiological examinations. The system also carries small medical and housekeeping supplies, inter-office mail and bulletins, and fresh supplies of several dozen different kinds of forms utilized in our day-to-day operations.

We began using Airtubes about ten years ago, and have recently finished the second major expansion of our system. Careful observation has convinced us that the savings obtained are enough to repay the capital costs and leave a tidy dividend besides. In the Truett building alone, we believe the system represents the equivalent of approximately five fulltime messengers during each of the daytime shifts. But even five messengers per shift couldn't provide each nursing station, as our pneumatic tube system does, with the means of dispatching a message to other departments immediately, regardless of when the need arises.

Few hospitals hire messengers, of course; usually when prescriptions must be filled or supplies obtained it is an attendant or nurse who makes the trip. The most important benefit of the Airtube system is that it eliminates the need for these absences, and permits nursing floor personnel to spend more time caring for the patient.

In those areas where tube stations have been installed only recently, it is generally agreed that the result has been a noticeable improvement in working efficiency. Supervisory personnel have made comments like the following:

"There's less rush and pressure; more of our people are immediately available, regardless of when they're called."

"Our routine work is simplified. When a patient is scheduled to receive a bath, for example, the attendant who is supposed to give it to him isn't standing in line in CSR, waiting for an order, as often happened in the past."

(Continued on next page)

**Designed, built, and installed by the Lamson Corp., Syracuse, N. Y.

CSR orders are delivered to each nursing floor of Women and Children's Hospital via selective vertical lift. Device loads and unloads automatically, which permits a high degree of utilization as well as reducing order-delivery time.

"The patient generally has to wait a shorter time when he turns on his call light."

"When some unexpected situation arises that requires additional personnel, they can usually be rounded up quicker and easier than was possible before."

The selective vertical lift which ties the central supply room of our Women and Children's Hospital to each nursing floor produces the same sort of time and labor savings that our Airtube system does. When supplies come upstairs on the lift, they are pushed onto a discharge conveyor automatically, making room immediately for another load. Similarly, in the central supply room, the order is put on a feed conveyor, and when space becomes available on the lift it is automatically taken aboard.

With this arrangement we're able to deliver CSR orders in minimum time, and during rush periods the chance that the system will become overloaded is minimized. Also, we save time for the CSR staff. As soon as an order is filled, the clerk puts it on the conveyor and, without waiting, begins on another. This is not the case with the dumbwaiters used by many hospitals for the same job. We have one servicing the Truett and Veal buildings. Because it can't be loaded and unloaded automatically, this equipment isn't utilized as effectively, and it requires several minutes longer, on the average, to deliver each order.

We use a sturdy fiber container, measuring 10 inches deep, 16 inches long, and 10 inches wide, to move supplies on our selective vertical lift. It handles between 100 and 250 orders per day, and accommodates just about every item in our supply room. Each load is routed to its destination by setting a dial located alongside the sending station. Like the Airtube system, the lift permits communication between any two stations.

Being able to deliver a CSR order in the same container which was used to assemble it represents an important advantage. In our main central supply room which serves Truett and Veal, orders are first accumulated in grocery-type shopping carts. Then the items have to be transferred, one at a time, to the dumbwaiter.

One of the knottier problems facing many hospitals is how to provide each patient with three hot, appetizing meals each day, at minimum cost. At Baylor, we have approached these difficulties through a dual system. All food is prepared in a central location. Then it is carted to diet kitchens on each floor of our older buildings (Truett and Veal). Here the trays are made up and carried by "tray girls" to the patients.

In the Women and Children's wing, we utilize a single serving kitchen, located in the basement. Trays are made up as they travel along a powered belt conveyor, and then are transferred onto a "Trayveyor" automatically. The latter device delivers them to serving personnel on each floor. At the end of the meal, the Traveyor equipment brings soiled dishes and trays down to the dish room adjoining our central serving kitchen.

With this system, it takes only four and one-half minutes for a tray to be loaded and delivered to the patient. The serving kitchen prepares 200-235 trays per meal, involving between four and five different menus, and gets all of them to the rooms within the space of 35 minutes.

Our experience with conveyor-type tray delivery has convinced us that it does an excellent job, particularly in the type of building in which we use it. The comments we've received from patients confirm this conclusion. They like the prompt service, also the fact that hot foods arrive hot, and cold foods, cold.

Whether conveyors represent the most economical method of distributing meals depends on a number of variables. The fact that conveyors reduce or eliminate the need for refrigerators, stoves, dishwashing equipment, food-storage compartments, silver, dishes, and other serving and preparation equipment on each floor is an important consideration—and one which can produce a substantial saving in hospitals where trays can be transported vertically to nursing floors which have only one nursing unit each. In our Womens and Children's wing, for example, the diet kitchens, by comparison, serve between 76 and 92 patients each. Unless the floor population is of this latter magnitude, it is probable that the capital costs of diet kitchens per patient will be significantly higher than those generated by the centralized type of service.

The heavy workloads now being shouldered by hospital staffs throughout the country can be expected to continue for a long time. It is almost a truism that mechanization can ease this burden by increasing the productivity of each professional and non-professional staff member. When applied to internal communication and central supply services, mechanization is particularly valuable, we have found. Not only does it increase working efficiency, but also it expedites delivery of items that are essential to the patient's diagnosis, treatment, and recovery—and, in the process, helps significantly to improve the quality of the care provided.

Factors that Create The Demand for Medical Care

By Sigmund L. Friedman, M.D.*

The second article of this series (HOSPITAL TOPICS, June, 1961) on community planning for hospitals, was devoted to an examination of the concept of need for medical services. It defined what the community *requires* in the way of people, services, and facilities under conditions of effective and appropriate use of preventive, curative, and rehabilitative medical services in order to achieve and maintain a satisfactory level of health. Need is a medical concept, and as such, is but one element (though the major one) in the creation of an "effective demand" for care. In an ideal system of comprehensive medical care, every admission to a hospital would be in response only to medical need—but, since we do not live in an ideal world, there are other elements that contribute to the creation of an "effective demand."

This article will be devoted to a discussion of these other major elements.

The factors that contribute to the creation of effective demand form an intricate job whose fibres cannot be separated except conceptually. About three dozen such factors have been listed at various times; these can be grouped into three categories:

1. Quality availability and utilization of medical care and alternative community services and facilities.
2. Attitudes of the population (general and medical) towards medical care and the utilization of existing services and facilities.
3. Ability of the population to pay for, or otherwise procure, medical care.

Some of the factors included in these categories are:

1. (a) Availability and competence of physicians and other professional personnel in a community.
   (b) The range of specialist services available.
   (c) Ability of physicians to make home calls in remote areas.
   (d) Distance from patient's home or physician's office to hospitals.
   (e) Availability of accredited hospitals and major medical centers.
   (f) Availability of non-hospital facilities in a community, such as diagnostic and treatment centers, medical group practice clinics, nursing homes, rehabilitation facilities, home care programs, social welfare programs.
   (g) Coordination and integration of all medical (including hospital) services and facilities.
   (h) Hospital policies governing the admission of patients with specific types of illness such as psychiatric, acute communicable, and long-term.
   (i) Availability of preventive medical services in the community.
2. (a) The awareness and attitudes of the public towards medical care in general, and preventive medicine and hospital care in particular.
   (b) Attitudes and customs of physicians towards preventive medical care and hospitalization.
   (c) Attitudes and customs of physicians towards utilization of medical resources other than public health and hospital, such as special diagnostic and rehabilitative facilities, and towards other professional, paramedical resources.
   (d) Cultural characteristics of the population, including educational level, local customs, and, sometimes, religious affiliations.
3. (a) The purchasing power of the local population.
   (b) The extent and nature of medical care and hospital insurance in the community.
   (c) The availability, and varieties, of "free" medical and hospital services provided by voluntary and governmental agencies.

The effects of any one of these factors cannot readily be isolated for study. Moreover, not one of the factors is static; all are social processes, and as such undergo continuous change. Frequently, they tend to cancel one another out. For example, there is reason to believe that as the educational level of a population rises, the demand for curative-medical care (including hospital care) increases; but there is also reason to believe that with a rise in educational level, there is increased demand for preventive health services.

Despite the difficulties inherent in research in this field, there is an increasing number of reports that are well worth careful study.

It is commonly assumed, for example, that there is overutilization of hospitals by persons with insurance. One survey found that there are 14 hospital admissions per 100 people in an insured group, as against nine per 100 in the uninsured. This study also found that, despite the shorter average length of stay in the in-

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sured group, it averaged 100 patient-days per 100 persons annually: 30 days per year per 100 persons more than in the uninsured group. In contrast to this study, another (though it found almost identical rates for hospital admissions in both insured and uninsured groups) found that the shorter than average length of stay in the insured population was enough to offset the higher rate of admissions, so that the average number of patient-days per year was about the same for both insured and non-insured groups.

Whatever the "common-sense" influences from these data may be, we simply do not know whether there is over-utilization by one group, or under-utilization by another. Nor do we know how many—if any—hospital admissions are unjustified.

Another widely accepted thesis has been that where health insurance covers ambulatory as well as inpatient care, hospitalization rates are lower than where only hospital and surgical costs are covered. This thesis appeared to have received considerable support from a study of matched groups of New York City residents insured under Blue Shield and the Health Insurance Plan of Greater New York (HIP), both with identical Blue Cross coverage. This study found that the annual admission rate for HIP-Blue Cross enrollees was 77.4 per 1,000 as against 95.8 for Blue Shield-Blue Cross. The number of patient-days per individual was 0.6 for HIP enrollees, compared with 0.7 for Blue Shield enrollees.

However, a subsequent study compared the utilization of HIP-Blue Cross enrollees with the enrollees of Group Health Insurance and Blue Cross. Despite the fact that the enrollees of both groups had relatively equal access to a full range of medical services and the same Blue Cross coverage, it was found that the hospital admission rate for GHI members was 11.0 per 100, in contrast to a rate of 6.3 for HIP. There were 0.4 patient days per individual enrolled in HIP, and 0.9 for GHI.

It would therefore appear that "the difference in hospital utilization cannot be attributed to the absence or presence of insurance against the cost of physicians' services outside of the hospital." Put another way, it seems that "insurance of non-hospitalized medical care is not, by itself, a guarantee of lower inpatient utilization rates." To what, then, can the differences be attributed? As yet, there can only be more speculation.

Another factor contributing to the creation of an effective demand for medical care (and thus for hospital utilization) is the attitude of the population towards sickness and medical care. A casual, sometimes almost irresponsible, attitude towards many aspects of personal health is common in all social classes in America. Despite the well-publicized probability, for instance, that cigarette-smoking may be responsible for lung cancer, cigarette sales continue to increase; despite the known hazards of excess weight, the average American is about 20 pounds overweight; despite tremendous public concern, a large proportion of the American public still has not been immunized against polio.

At least two of these attitudes do not appear to be class determined. But there are others that do so appear. A study in a "typical" small town in upstate New York, done in the late 40's, found that there was much more indifference among families of laborers with a low average income to specific symptoms medically recognized as danger signals, than among the families of business or professional men. Despite this difference in perception as to what constitutes illness, there was a significantly higher proportion of labor-families with reported illness than in business and professional families. The implications of these differences for demands on medical care seem obvious.

Another study concerned in part with attitudes towards medical care dealt with social class and mental illness. In this study it was found that the lower the social class, the greater the proportion of mentally ill patients from that class—the lowest class contributing more than twice the proportion of patients its proportion in the population warranted; that there exists a definite relationship between class and type of mental illness—the lower the class, the greater the proportion of psychoses, and the higher the class, the greater the proportion of neuroses; that upper class patients go voluntarily for psychiatric help much more frequently than the lower-class patients who ordinarily go only under compulsion.

The implications of these findings for demands on medical personnel, services, and facilities are obvious.

Other factors have been similarly studied and reported; many of the earlier studies are being extended and repeated, using more refined technics. Their number is too great to be reviewed here, but all are being done on the reasonable assumption that many of the "facts" we take for granted may not be true—and this assumption has been supported by many of the investigations.

Some of the studies can be related directly to the quantitative requirements of a community for medical services and facilities; many cannot. The next article in this series will deal with some of these studies and requirements.

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DIRECTOR OF NURSING

(Continued from page 37)

As it will in hospitals, the news traveled fast. The director of nurses justified her action on the basis of a serious shortage of registered nurses to staff the various units. But, unhappily, once the nurse had returned to her post resentment mounted on the part of other staff members, particularly aides and orderlies. Again absenteeism was on the rise. And in a matter of weeks the director of nurses had what amounted to a revolt on her hands. In the end it called for the intervention of the administrator.

That director learned a hard lesson. Generally, all members of the nursing staff will accept firmness when it is carried out fairly and with justification. They will react with strong resentment, however, when rules are imposed on certain members of the staff while the remainder is free to ignore them.

Administrator's evaluation. The administrator should give careful consideration to the director of nurses' reports to him. He should ask himself whether the reports really inform him on developments within the nursing service. He should determine whether her reports are frank and dependable, even when certain developments reflect unfavorably on her service.

Her reports will also indicate whether she has the capacity to think outside her own department, to be concerned with the relationship of nursing to other hospital services; and, further, they will indicate her alertness to changing trends in the hospital and nursing fields. In paticular the director should keep the administrator posted regarding trends in the areas of personnel policies and hospital equipment.

The administrator will have other evidences of the director's competence from the letters and comments of patients and visitors. Her ability to direct her department effectively will be reflected very often in the attitude of the attending and resident doctors toward nursing service.

At all times the director of nurses must be a person who demands respect. She must recognize the fact that she does not represent the nursing department alone —that in her position she becomes more than a nursing director—she becomes a good-will ambassador for the hospital she serves.

PRESS CONFERENCE

(Continued from page 43)

in twist if possible, and should express appreciation for the man's interest, not for his story. The press is no more immune to the fun of "being loved" than the rest of us. In addition, a follow-up note provides an opportunity for passing on some new information.

At this point, let us stop and ask whether press conferences are worth all this concentration. I think so. For the press conference (and its close relative, the special event for the press) comprises the "show business" of public relations. This is one time you hold the spotlight at the center of the stage, and the applause that results is completely credited to you. This is why many organizations consider it helpful to have the assistance of professional counsel, people who are experienced in conducting such activities and are objectively analytical in spotting the possibilities that will most interest the audience.

Press conferences range from the small, undecorated meetings held in the cafeteria to the big productions—the two-day annual holidays for the nation's auto editors, for instance, which included such arrangements as fountains stocked with mountain trout so that the correspondents could flycast for their own dinners. But it isn't the size nor the elaborateness that determines the press conference's importance. It's what it has to say, and whether the most efficient way to project it is being used.

There is no sure-fire recipe for a smash-hit press conference. But I think in this article we have come pretty close to a guidebook for press conferences. It goes like this:

1. Hold a press conference only for news reasons.

2. If you've held another press conference recently and you can't overlook this opportunity either, turn it into some other kind of event—and casually invite the press.

3. Spring your big news at the press conference.

4. Time the press conference to fit the deadlines of the papers you are most interested in hitting.

5. Get the press and your key people better acquainted.

6. Be prepared to entertain and answer questions.

7. Make the press conference activity add something to the story and information you hand out.

8. Control the refreshments, if you have them at all.

9. Have plenty of informational materials available.

10. Make it easy for the press to work at the conference.

11. Invite everybody you think might be interested.

12. Sell a reason for attendance in your written invitation and follow-up phone call.

13. Follow through to develop features and side publicity benefits.

14. Be gracious enough to thank editors for bothering to come.

15. Use an outside counsel or service if you know you will get a better job that way; it's worth it.

"My wife accidentally sat on my hypodermic this morning. Just for fun, send her a bill for two bucks."

Consultant's Corner

By John G. Steinle

EDITOR'S NOTE: Because Mr. Steinle has received numerous questions regarding medical records and medical record practice, this month's column is devoted exclusively to selected questions on this subject.

Q. Please define a consultant.
A. A consultant is a second physician called in by the attending physician to examine and discuss his patient's condition. The term does not necessarily imply seniority. Any physician who sees a patient with a colleague is the consultant on that case, no matter what his standing on the staff may be. The consultant must be qualified by training and/or experience to give a competent opinion in the special phase of the patient's illness about which he has been called. The determination of the consultant's competence should be made by the hospital staff (medical board).

Q. Is an active committee on infections a compulsory requirement for accreditation by the Joint Commission, or is it just a recommendation?
A. Bulletin #18 of the Joint Commission on Accreditation of Hospitals recommends that a committee on infections be established.

Q. At a meeting in Minneapolis it was stated that the 48-hour sheet for admission was to be discontinued. Has this been made official, and if so, as of what date?
A. The sheet is still acceptable, according to the December, 1960, *Standards for Hospital Accreditation.*

Q. Many hospitals file nurses' notes separately from the clinical chart, as long as they are readily available. Is this practice permissible?
A. It is permissible and legal.

Q. Is it permissible for a patient to sign his/her own autopsy permit? There is a conflict as to whether a person can, by his will or by an agreement before his death, authorize an autopsy on his dead body.
A. Check with your hospital's legal authority for the state ruling on this. The established ruling is that there is a quasi-property right in dead bodies which is vested in the nearest relative of the deceased, arising out of his duty to bury his dead. An authorization by the patient for the disposal of his own body is not considered valid, as it violates the right of the nearest relative to bury the body.

Q. In a coroner's case in which there is a hospital record, the next of kin has authorized either her own or the other side's attorney to review the hospital chart. Who is responsible for releasing this information—the hospital or the coroner's office?
A. When a patient is dead, the administrator or executor of the estate must present proof of eligibility to allow inspection of the chart, along with authorization by administrator or executor. The hospital may release information about the patient, but autopsy findings must be obtained from the medical examiner or coroner.

Q. In traumatic cases, some doctors refuse to write any history other than that relevant to the current accident. How would this history be reviewed by the JCHA inspector?
A. The JCHA believes that every patient deserves an adequate history, regardless of the reason for which he is admitted. Past history should include any history of diabetes, asthma, or other medical illness which might have a bearing on the present illness. If an accident victim is admitted in an unconscious state, the doctor will give no past history on previous illness on the basis that it would be strictly hearsay. However, the patient's past history should be taken as soon as he regains consciousness. In the case of a minor or incompetent, the parent or guardian should give the past history as soon as possible.

Q. Does the New York state medical society require one year's internship for membership?
A. No, but the physician must be licensed by the state.

Q. Must tonsils, adenoids and teeth be submitted for pathological examination?
A. Any tissue, parts of bodies, or foreign bodies must be sent to the pathological laboratory for examination at the close of the operation.

Q. How current should coding be at the time of a JCHA inspection?
A. The Joint Commission does not state in its standards how current coding should be. It recommends that records be completed as far as possible within 10 to 15 days of discharge. Coding should probably not be more than two months behind, so that charts may be filed as quickly as practicable.

Q. What is the definition of an emergency-room death?
A. An emergency-room death is defined as the death of a patient who showed some signs of life upon admission to the emergency room but subsequently expired in that room, before admission to the hospital.

Q. How many hospitals are using the form "An Analysis of Hospital Service," produced by a commercial firm?
A. It is not known how many hospitals use this, but it does incorporate information needed by adminstration. It includes information needed to complete questionnaires sent out by various agencies annually, and the questionnaire sent out by JCHA prior to its survey.

Q. Should the register be started and completed by the admitting officer or by the medical record librarian?

A. If the question refers to the admission register, it would depend upon the size of the hospital. In some hospitals the medical record librarian is also the admitting officer. It would seem more practical to have the person who starts the entry in the register complete it.

Q. Are inpatient registry cards filed separately from those of outpatients?

A. It is more efficient to use a centralized system in which all case records of a patient, whether inpatient or outpatient, are filed together within a central department. This is true whether there is a serial-unit system –in which each new admission, no matter to which service, is given the next new number in the register, and then all old records are brought up under the new number and filed together, or a *centralized unit system*—in which a patient is assigned a number on his first visit or admission to the hospital and retains that same number for all subsequent visits or admissions.

Q. Who is responsible for recording postoperative wound infections? What is the procedure?

A. The "Report of Hospital Infection" is completed by the charge nurse of each unit and forwarded through the director of nurses and the administrator to the chairman of the infections committee.

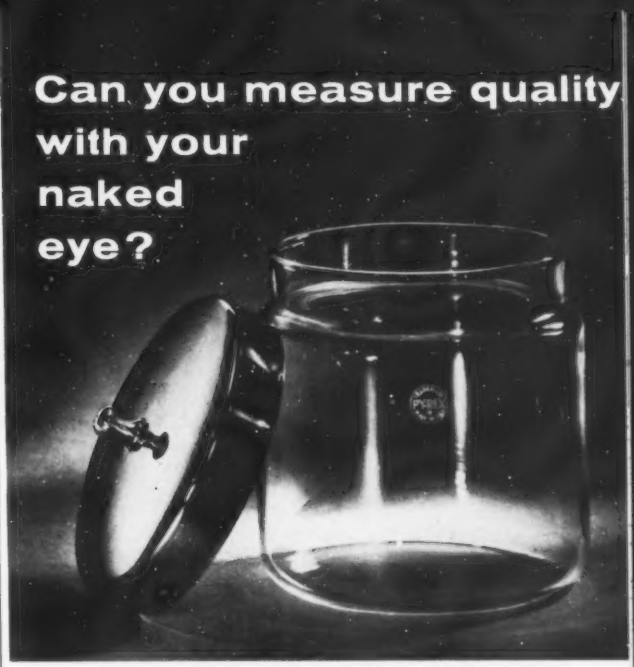
Q. How do hospitals report communicable disease? Do they file a report on the chart that the Department of Health has been notified?

A. A report should be attached to the chart over the signature of the attending or house physician, indicating that a communicable disease notification has been sent to the Health Department.

Q. Should the record room be responsible for completion of birth certificates and filing them with the Health Department?

A. This is a matter for the individual hospital to decide; again, it depends on the size of the hospital. In many larger institutions an admitting officer is charged with this responsibility.

"Looks like they are getting after us again."



All too frequently products have a look-alike quality that defies comparison. "A Jar is a Jar is a Jar" is a common reaction until one sees these new hospital jars made of PYREX®.

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Review of Hospital Lawsuits

By Leo T. Parker, Attorney at Law

• HIGHER COURT WILL APPROVE VERDICT

It has often been said: "You can never tell what a jury will decide." Nevertheless, the higher court will approve a jury's verdict, unless convincing testimony is introduced showing error, malice, or fraud.

For example, take the case of *Livingston v. Portland General Hospital, 357 Pac. (2d) 543.* The plaintiff was a 68-year-old woman who owned and operated a drug store. One day she fell on the floor of her drug store and landed on her left side and on her outstretched left arm and hand. A doctor was called, and he came immediately from the hospital. With the help of an assistant he placed Mrs. Livingston in a wheel chair and took her to the hospital, where he examined and x-rayed her arm and shoulder. He found a fracture of the left humerus and placed her left arm in a cast which extended from the shoulder to the fingers of the hand and held the elbow at about a 90° angle.

The patient complained to officials of the hospital when the cast was first put on that it was too tight. She was assured it was all right and that the tight feeling was caused by the natural swelling of the arm. She returned to her home later in the day. Four days later, after many complaints that the cast was too tight, and considerable swelling in her hand and shoulder and some discoloration in the hand, she was readmitted to the hospital and remained four days. During this time her left arm was placed on a pillow and heat was applied.

The attending physician saw the condition and heard her complaints but did not deem it necessary to bivalve the cast or to remove it.

Approximately one month later, Mrs. Livingston was again admitted to the hospital, and the cast was bivalved and removed by the same physician. At this point there is at least one important variation in the testimony. The doctor testified that there was absolutely no obstruction inside the cast, but Mrs. Livingston testified that there was a roll of plaster and gauze, approximately the size and shape of a cigarette, imbedded in the flesh in the inside of the arm at the elbow joint, that the flesh had partly grown over it, and that the adjacent skin had a greenish color and a very bad odor. The plaintiff had lost the use of her left arm. She sued both the doctor and the Portland General Hospital for damages.

Notwithstanding considerable contradictory testimony, the jury awarded her $17,500 damages, and the higher court approved the verdict, saying:

"The evidence showed in this case that the cast was left on the arm for a period of over five weeks. During all that time the plaintiff (Livingston) complained constantly and bitterly that the pain and pressure were terrific and unbearable. The lower court fully and properly covered all matters necessary to the case in its instructions to the jury. We are convinced that the issues were fully and fairly submitted to the jury and that the evidence was ample to sustain the verdict and judgment."

LAW OF EVIDENCE

Recently a higher court held, in effect, that a patient who sues for malpractice cannot expect to win a favorable verdict on the basis of circumstantial evidence.

In the case of *Frank v. Diocese, 355 Pac. (2d) 637,* the plaintiff had suffered paralysis following a hemorrhoidectomy. The paralysis was due to arachnoiditis. The arachnoid membrane is located immediately within the dura, the heavy outside covering of the spinal canal.

The testimony disclosed that in administering the anesthetic the object was to anesthetize the areas supplied by the motor and sensory nerves stemming from the sacral and lumbar regions. The desired result may be accomplished either by administering a caudal-block anesthetic in the sacral canal, which is located between the coccyx and the subarachnoid space, or by administering a spinal anesthetic in the subarachnoid space, which begins a few inches above the coccyx and continues up the backbone toward the head. Different strengths and types of drugs are used for caudal-block and spinal anesthesias. The physician stated that he administered a caudal block in this case.

The plaintiff contended that the negligence of the physician consisted of directly introducing into the subarachnoid space the caudal anesthetic which induced the arachnoiditis. However, there was no direct evidence that the physician did inject the anesthetic into the subarachnoid space.

In refusing to hold that Frank could recover damages from the physician, the higher court said:

"A physician is not a warrantor of a cure. His liability rests solely on accountability for his negligent or wrongful acts. If the evidence in a case discloses two or more possible causes for an injury, for only one of which a defendant (physician) is responsible, liability does not attach unless the evidence discloses that the cause for which he is responsible is the more probable."

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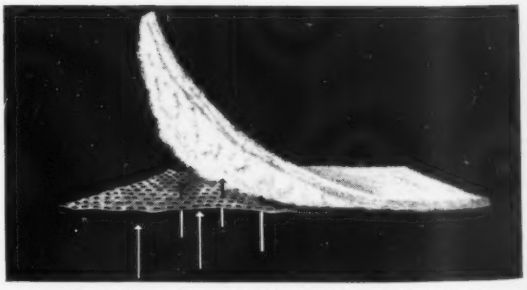

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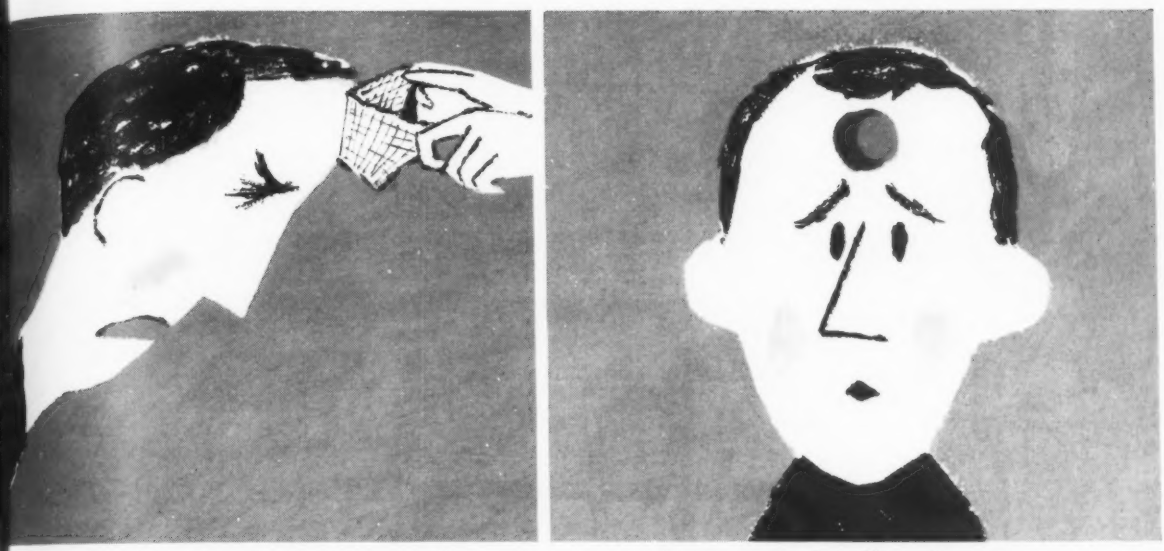

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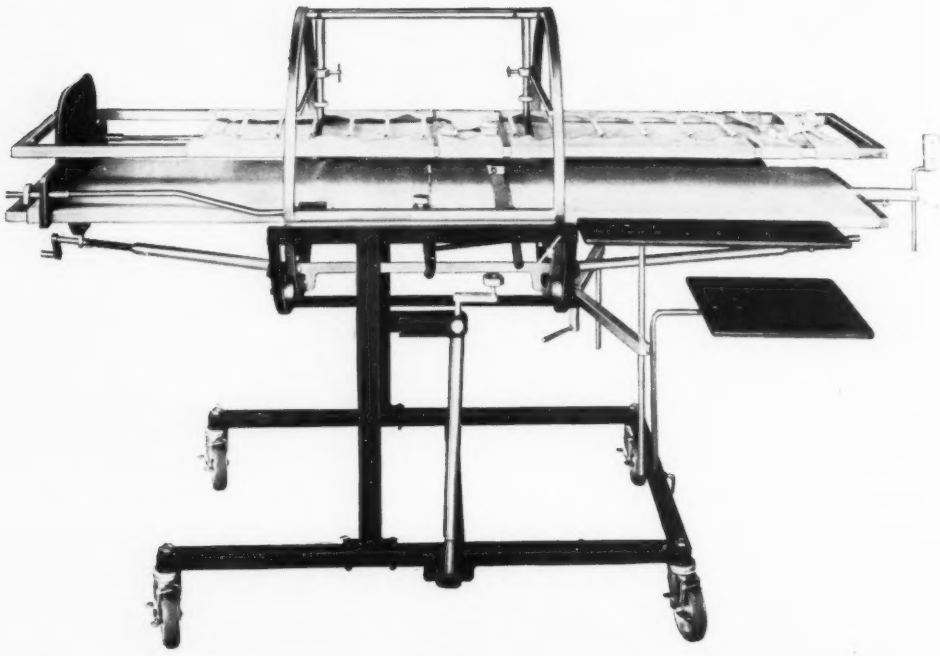

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'Play Interviews' Used to Evaluate Child's Reaction to Hospitalization

Pediatrics

By Ellen L. Davis

There has been an increasing awareness in recent years of the traumatic effect of hospitalization on children, especially those in the preschool age category. Much of it can be attributed to separation anxiety, which is much more marked under the age of four years. There is a trend on the part of hospitals to mitigate emotional reaction by providing facilities for the mother to stay with the child in the hospital, by shortening the hospital stay and by treating youngsters on an outpatient basis when possible and feasible.

In addition to the anxiety of separation, preschool children have very deep fears of bodily mutilation, and severe reaction to procedures of bodily intrusion out of all proportion to the pain of the procedure.

Play has long been recognized as an integral part of a child's life. Freud emphasized that children repeat in their play everything that has made a great impression on them, in order to become master of the situation. "The unpleasant nature of the experience," he wrote, "does not always unsuit it for play. If a doctor looks down a child's throat, or carries out some small operation on him, we may be quite sure that these frightening experiences will be the subject of the next game, but we must not in that connection overlook the fact that there is a yield of pleasure from another source. As a child passes over the passivity of the experience to the activity of the game, he hands on the disagreeable experience to one of his playmates, and in this way revenges himself on a substitute."

Piaget said, "Although play sometimes takes the form of repetition of painful states of mind, it does so not in order that the pain shall be preserved, but so that it may become bearable, even pleasurable, through assimilation to the whole activity of the ego."

Erikson has recognized the child's need for solitary play in the presence of a sympathetic adult: "Solitary play remains an indispensable harbor for the overhauling of shattered emotions after periods of rough going in the social seas . . . for to play it out is the most natural self-healing measure childhood affords."

Play, as therapy, is recognized in hospitals generally. It is considered part of nursing care at Children's Hospital, in Pittsburgh, Pa., where most of the study discussed in this article was carried out, and it is understood that each child who enters the hospital will be included in the play program as his condition permits, and student nurses are assigned to a period of play as part of their educational experience.

However, when Florence H. Erickson, R.N., Ph.D., professor and chairman of the department of pediatric nursing of the University of Pittsburgh, inaugurated a two-year study of play interviews (as differentiated from play participation) to observe and evaluate children's reaction to hospitalization, there was no evidence that this technic had been undertaken at any hospital.

The study was carried out under a research fellowship from the Nursing Resource Division of the U.S. Public Health Service at Children's Hospital and the Arsenal Health Center.

Results of the first year's findings and a general discussion of the approaches used are the subject of this article. Results of the second year, which were in the

Child responds quickly when project investigator Jacqueline Holt presents carrying case of toys. Soon she is deeply absorbed in play. Two sorts of play material are used in interviews: clinical equipment and hospital figures, and toys and family figures.

At left: Though most of the children tried to avoid the thermometer the first time they saw it, all except one used it during some interview. Many were unfamiliar with the rectal method and were confused by it, but some of the girls followed the technic very accurately in playing it out.

Below: Child squeezes a disposable enema bottle, trying to force out all the air. She seems to have no emotional reaction to the item itself. She has never had an enema, and therefore has no unpleasant memories associated with this "toy." To another child, however, investigators point out, the pointed top might suggest intrusion, and she might use it as she would a syringe or needle—to hurt or mutilate.

process of being evaluated when TOPICS visited Children's Hospital, will be reported in a subsequent article.

"We chose children in the four-year-old group for several reasons," said Dr. Erickson. "Those who are younger usually don't verbalize or play out their experiences. Most of their emotional reaction is based on separation, and is expressed in a desire to be held in the interviewer's lap, where they sob for their mothers."

According to Erik Erikson, in his *Childhood and Society*, "much of the behavior of this stage characterizes a variety of configurationally similar activities and fantasies. These include intrusion into other bodies by physical attack; the intrusion into other people's ears and minds by aggressive talking; the intrusion into space by vigorous locomotion; the intrusion into the unknown by consuming curiosity."

"Despite this statement of behavior," continued Dr. Erickson, "very little is known about children's interpretation of intrusive procedures. We do know they tend to respond positively to any experience for which they have been prepared; and they seem to assimilate those experiences which they have opportunity to reenact in play.

"This age period is also the stage of development in which children have a strong love attachment for the parent of the opposite sex and are striving with rivalrous feelings toward the parent of the same sex. This conflict gives rise to feelings and thoughts for which the child expects to be punished."

Thirty children were selected for the study, and were divided into three groups of 10 each. Group I was used as the control group. It was made up of children of generally normal home background, who were currently attending nursery school at the Arsenal Health Center, had never been hospitalized, and whose parents were available for interviews and willing to participate.

The rest of the children experienced hospitalization. Group II were interviewed only after their release from the hospital. Group III were interviewed during hospitalization and after their release from the hospital.

Subjects for the study were selected at random by age with no emphasis on the type of disease for which they were hospitalized, except that operations for tonsils and adenoids, and hernias, were eliminated because of the very short hospital stay. Children suffering from congenital anomalies of the genitalia (a condition which in itself imposes intense castration fears), infectious diseases and mental retardation were also eliminated, as were long-term illnesses. (The current study, which includes children from three to five years of age, eliminates no condition other than mental retardation.) One qualification was that the child live within a radius of 18 miles of the hospital to facilitate home interviews.

Since the first year's study was designed to gain information about children's reactions to intrusive procedures, which would be of practical help primarily to nurses, those procedures were chosen which are most often carried out by nurses, or with which nurses assist. Every child participating had been subjected to at least one of the three categories of procedures: oral procedures, which included administration of pills and liquid medicines, and examinations using tongueblades; anal procedures, which included rectal temperatures and enemas; and cutaneous procedures, which included injections, blood tests, intravenous fluids, and blood transfusions.

Play material used in the interviews were of two sorts: clinical equipment and hospital figures; toys and family figures. In the first group were blood test

At right: After picking the gun up again and again, and showing some anxiety about it, the little girl finally pulled the trigger. Her attitude, however, was not vengeful.

Below: Intravenous tubing is included in the clinical "toys." Dolls shown in picture are used by children in acting out the clinical procedures to which they have been subjected.

needle; cotton balls; dropper bottle; disposable enema equipment; hypodermic syringe and case; gauze squares; intravenous tubing; medicine bottle; medicine cups; pills in box; rectal tube; test tube; thermometer and holder; tongueblades; doctor figure and nurse figure.

In the second group were a car; tablet and crayons; doll bed; nursing bottle; refrigerator; sink; spoon; stove; gun; bathtub; toilet; boy and girl figures and father and mother figures.

In the first study, the dolls were made of cloth, and ranged in height from five to 11 inches. Since most youngsters like to play with water, and use it freely, rubber dolls had to be substituted when the study was enlarged.

"The figures," said Dr. Erickson, "have definite sex characteristics, which are very important to children, especially in this age group. They are very concerned, and examine the figures very carefully. When they discovered that the women were not wearing bras, nor the men underpants, their shocked reproval sent us to the nearest five and ten to rectify our omissions. Some of the children are pretty matter-of-fact about sex, others are very concerned; some strip the figures in a businesslike way, others make quite a point of shielding them from our eyes when they undress them or toilet them. Their reaction depends on their background and the inhibitions they experience in their own environment.

"In the current study, a Negro family and hospital figures have been substituted in some instances. In the case of the nurse and doctor, both Negro and white figures have been used. For white patients, only white figures have been used."

Jacqueline Holt, R.N., M.N., and Mary Kazik, R.N., M.A., collected data in the current study. Dr. Erickson and Miss Holt are at the present time analyzing the data with the help of consultants Erik H. Erikson, psychoanalyst; Margaret McFarland, child psychologist, who is the director of the Arsenal nursery school, and John Reinhart, child psychiatrist.

Permission to hold play interviews was obtained from the director of nursing service, and the charge nurse and parents were consulted before any child was included in a group. Each interview lasted one hour.

"We tried to pick up our patients as soon as possible," said Miss Holt, "often being there when they were admitted. We tried to be with them at critical times—when they were going to the operating room or having a cast changed. We visited them at home at least three times. We wear uniforms in the hospital, but street clothes on home visits. Our uniforms seem to establish our identity as nurses, and this seems to carry over to the home situation.

"Most of the youngsters are extremely preoccupied with the syringe and needle. They are afraid to touch it, but once they have broken through their fear, they play with it more than any other single item. They equate the gun and the syringe, which is a natural association—we equate it ourselves by calling an injection a 'shot.'

"In interviewing the children," explained Miss Holt, "we encourage play, but we do not participate in it or attempt to direct it. If a situation arises which indicates that the child needs definite help in understanding his illness, a piece of equipment, or a procedure, we try to help him either during the interview or following it.

"We have learned a great deal about what he does and does not understand, and this is very important to our goal of adequately helping nurses to understand this lack and to explain procedures.

(Continued on next page)

"Children usually are not as traumatized by oral medications, because they seem to associate them with the way they eat, which is an everyday, accepted procedure. Anything given in an intrusive way causes difficulty. When they talk about it during play, they often change their voices, and say such things as 'That's all; didn't want to do it.'

"There is considerable ambivalence about procedures. Some children are reluctant to stick the doll with a needle—that is, they are reluctant the first time; after that, it often gives them considerable vindictive pleasure. On the other hand, some seem to be impelled to do it in order to relieve themselves of their emotional stress.

"Some youngsters," continued Miss Holt, "play out their hospital experience over and over again. As they work this out, they go back to playing such life experiences as bathing, feeding and toileting which characterize the play of the control group."

As we accompanied Miss Holt to a patient's room to observe a session, she explained the play interview technic.

"We tell the youngster there are toys in the suitcase, if he would like to play with them. We never use pressure. The interviewer takes the objects out of the suitcase and identifies them, takes the equipment apart to demonstrate how it works, and puts it back together again before letting the youngster take over.

"The interviewer sits by watching, listening, and taking notes on all the child says and does. The notes are later dictated and typed. We have tried tape recordings, but voices of young children are hard to record. The taking of notes doesn't seem to bother children too much until they reach the age of five or six. They are curious about what the observer is writing, but even so, they quickly become engrossed in play, and the note-taking does not seem to change the play.

"We keep adding supplementary information to the interview in order to get as complete a picture as possible. We make a summary of the course of the illness, the patient's total experience in the hospital, including procedures, behavior, treatments, and the like. We notice that some patients play out experiences which they have observed, so we must know something about their roommates, too."

The little girl at whose crib we stopped responded eagerly to the carrying case of toys. Miss Holt's opening of the case was observed with rapt attention, which was immediately transferred to each item the child lifted out and examined closely. In a matter of minutes, she was deeply absorbed in play.

She went back to the gun again and again, picking it up gingerly, then dropping it with some show of anxiety in her face. Finally, with a quick gesture, she picked it up, pushed her tongue hard against her upper lip, squeezed her eyes shut, and pulled the trigger. After that, she shot it at intervals. Her attitude was not vengeful, and the gun was not directed at either Miss Holt or the visitor . . . a fact Miss Holt noted with satisfaction. "I've been shot so often by so many youngsters," she commented, "that if these guns held bullets my life would have run out early last year!"

The little girl was squeezing a disposable enema bottle, intent on forcing out all the air, making a whistling noise. There seemed to be no particular emotion attached to the item.

"But wouldn't that bottle be classified as an intrusive object?" we asked.

"It would," replied Miss Holt, "if she had experienced enemas. However, enemas are not routine in hospitals any more, and she has never had one. To another child, the pointed top might suggest intrusion, and she might use it as she would the syringe or needle—to hurt or mutilate."

Children who had not been hospitalized tended to play more imaginatively with clinical equipment than did hospitalized children. The latter tended to use equipment as it had been used on them, or as they had seen it used on others. Kathie, for instance, looked at the syringe with distaste, but she used it in her first interview to prick her doll's arm at the elbow, the same spot from which blood had been drawn from her. Harry showed obvious satisfaction in taking a blood test on the doctor figure the day after he had had repeated blood tests. Hospitalized children showed a readiness, almost a compulsion, to repeat over and over those procedures to which they had been subjected. In contrast, Jimmy, a nursery school child, used the needle to poke a hole in the medicine cup, and then drank through both.

Boys tended to talk more than girls during the hospital interviews. This was a reversal of the trend in the non-hospitalized children and the findings for children in general. All but one of the boys either talked about or handled the clinical equipment during the first hospital interview, but only one gave oral procedures and none attempted to carry out cutaneous procedures. In comparison, three of the girls used the hypodermic syringe, one gave oral medications, and two took rectal temperatures.

The boys seemed to avoid using the equipment by busying themselves with drawing, talking, or playing with other toys. This reticence in the boys about using intrusive equipment may have been because of their intense castration fears at this age, or because of a fear of giving vent to their own intrusive impulses in an already dangerous situation. They may also have felt that by avoiding their own intrusive impulses they could also avoid the intrusion of doctors and nurses.

The children tended to interpret anal procedures as though they were not very 'nice.' Boys tended to play more with the equipment, but girls used it more specifically for intrusion on doll figures.

Most of the children tried to avoid the thermometer the first time they saw it, with such exclamations as "oh, no," or "you can take that home with you." All except one, however, used it during some interview. Many were accustomed to oral or axillary temperature and were confused by the rectal method used in the hospital, though some of the girls followed the technic very accurately in playing it out.

The hypodermic syringe was played with or talked about more than any other object in the play material by the boys; it ranked second in girls' play. Sonny expressed what many of the children seemed to feel in his comment, "This is what I like, but I don't like to get it. I'd just like to give it to somebody else."

Ten of the hospitalized children showed hostile be-

havior with the doctor figure, 14 with the nurse figure —some exhibiting violent reaction.

In the hospitalized children, hostility doubled in boys and girls after they left the hospital. At home, they had adult figures beat each other or they staged fights between them. Some kicked, threw, or bit doll figures. The inference presents itself: Is it safe to be hostile toward adults in a threatening hospital situation?

Studies on frustration in children explain this reaction, since it is assumed in psychotherapy that frustrating experiences generate hostility and lead to some expression of hostility.

"This study," said Dr. Erickson, "was a pilot study concerned with a relatively small number of experimental subjects, but it confirmed the hypotheses that when given an opportunity to play with clinical equipment and other accessories for projective play, four-year-olds who are hospitalized are able to express their feelings concerning the procedures which they have experienced.

"The data presented clear evidence that the majority of the children studied perceived no protective intent on the part of the adult behind the intrusive procedure, but rather, considered them as hostile in intent with the exception of procedures in the oral area. The consistency with which the children interpreted invasion of the anus and skin as hostile is of considerable theoretical significance."

From the findings of the study, Dr. Erickson and her associates offer the following recommendations to help understand and so decrease the traumatic effects of hospitalization on youngsters in this age group.

1. Personnel working with children should recognize the four-year-old's level of understanding and include him in the planning of his care. Procedures should be done with him instead of to him.
2. Professional personnel should obtain and use as much information as possible about a child and his family in order to understand the child's reaction to hospital experience.
3. Professional personnel should understand and be able to interpret to parents behavioral changes in four-year-olds which occur with illness and hospital experience.
4. Four-year-olds should be protected from frightening sounds and sights in the hospital as much as possible.
5. The term 'shot', or any other term which indicates violence or punishment, should not be used in connection with child care.
6. The four-year-old's feelings about pulling down or removing the panties should be respected.
7. Preparation of four-year-old children for intrusive procedures should be based on the child's interpretation of what is being done.
8. Four-year-old children should be assisted to verbalize or express their feelings about intrusive procedures through play as soon as possible after the procedure has been administered. Boys as well as girls need opportunity to use dolls for this kind of play. Since most four-year-old children avoid clinical equipment in the first interview, it is felt they should not be offered this equipment except during play interviews.

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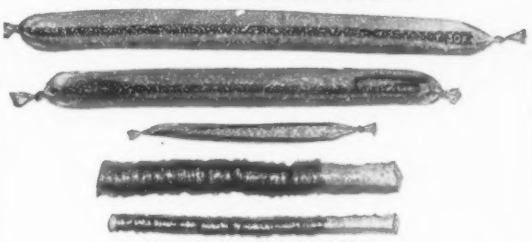

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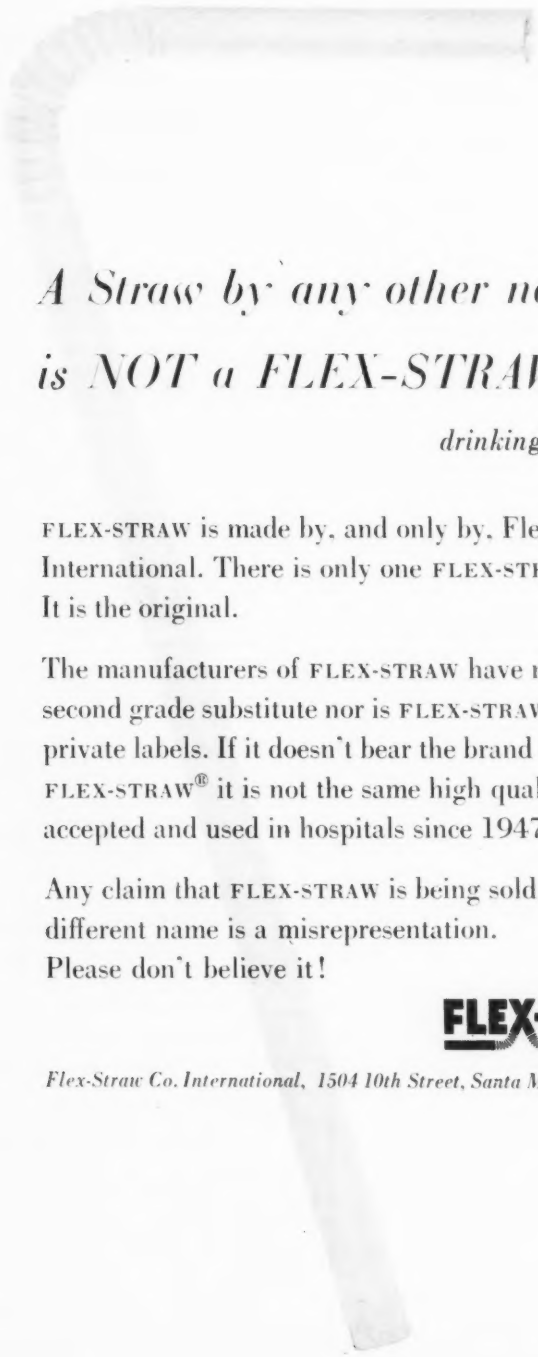

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Possible Causes of Mental Retardation

By Douglas P. Murphy, M.D.*

Mental retardation poses one of the major health problems of the human race. No group of persons is more aware of the truth of this statement than are those faced with its diagnosis and treatment.

While mental retardation is known to be genetic in origin in some instances, in other cases there is no evidence to support this assumption. In the latter situation one looks for a non-genetic cause, such as prenatal condition or trauma occurring at the time of birth.

Obstetricians are likely to agree with psychologists, who are beginning to believe that organic causes play a more important role in the etiology of mental retardation than was previously thought. This is especially true since it has been discovered that maternal disease can interfere with the development of the fetus in utero. They are also willing to believe, but would like better evidence to support the thesis, that factors in the birth process can cause mental retardation.

In certain cases there is no way of knowing whether a pathologic, fetal condition arises from prenatal birth cause alone, from some condition associated with the birth of the child, from a combination of both of these, or possibly from a genetic cause.

Prenatal Causes of Mental Retardation

A number of prenatal factors are charged with being responsible for both mental and physical development of the child. In recent years the evidence supporting some of these charges has become more clear-cut.

For example, it has been stated that 30 per cent of embryos receiving various doses of x-ray exposure exhibit gross deformities at birth, and that sixty per cent of those involve the head, the most common being microcephalus and microphthalmia.

As a result of this discovery, therapeutic, maternal, pelvic, and roentgen irradiation became one of the first recognizable nongentic, prenatal causes of mental and physical damage. To prevent future children from being so injured, the radiologist and the operating gynecologist have been warned against using therapeutic irradiation in the treatment of pelvic disease in married women of child-bearing age, if coitus had been practiced between the last menstrual period and the date of the planned treatment.

Disease is another prenatal cause of fetal injury, the best known example being German measles, which can interfere with both the mental and physical development of the embryo in a number of ways, depending upon the virulence of the virus, and the age of the embryo at the time of maternal infection. The earlier in pregnancy disease takes place, the greater the likelihood of fetal injury, and the more serious the damage.

In German measles, then, we have a non-genetic, preventable cause of mental and physical damage to the infant. When this disease complicates pregnancy, the parents should be informed of the chance that the newborn child will be affected and of the seriousness of the potential damage. The decision as to whether the pregnancy should or should not be terminated is one which the parents must make, since it is, perhaps, primarily a problem of ethics, or religious conviction.

Of 129 women who had mumps, 29 gave birth to

*Obstetrician, Farris Institute for Parenthood, Philadelphia.

damaged infants. Of 10 who had the disease in the first trimester of pregnancy, eight had defective children. The malformation rate in the general population is between two and three per cent.

Toxoplasmosis is another maternal disease which frequently has a disastrous effect upon the fetus, the infants exhibiting the following pathologic conditions in descending order of frequency: cranial calcifications, chorioetinitis, microphthalmia, mental retardation, convulsions, microcephaly, jaundice, hepatosplenomegaly, hydrocephalus, nystagmus, and squint.

A variety of pathologic conditions, including mental damage, has been observed in infants whose mothers have had inter-current diseases during pregnancy. For example, two mothers who had brucellosis in the second and fourth trimesters of pregnancy, each gave birth to a mentally retarded child (Schacter 1954). It is of interest that the same pathologic conditions were observed in the infants of these two mothers.

Swan and Tostevin (1946) reported upon two cases of herpes zoster complicating pregnancy. The infant of one mother was a deaf mute, had a heart defect and also was microcephalic. The infant of the other mother had a myelocele and bilateral club feet. Counter and Korn (1950) observed a case of herpes zoster which occurred during the first three weeks of pregnancy. The infant in this case suffered from congenital blindness. Duer (1955) observed congenital blindness in two children of different mothers who had herpes zoster. In one of these cases the disease occurred in the fourth month of pregnancy. The infant exhibited microphthalmia, cataract, club feet and mental retardation. The other mother had her infection in the third month of pregnancy. Her child had microphthalmia and cataracts.

Gerard, Lefebvre and Merlen (1948) reported the presence of malformations in the infants of four women who had influenza when pregnant. Two of the children had cardiac malformations, one had syndactylism and one had congenital cataracts. Schacter (1950) observed malformations in two children, whose mothers had influenza early in pregnancy. Marzana (1950) also observed cataracts in the child of a woman who had influenza in the third month of her pregnancy. In 1954, Schacter reported three cases of influenza occurring in the first, third and fourth months of pregnancy. One resulting infant was an imbecile; two were idiots.

Maternal infectious hepatitis also has been followed by the birth of abnormal infants. Schacter (1949) described a case in which the infant was mentally retarded. Kass (1951) observed hydrocephalus associated with slight microphthalmia. Delthil (1951) reported on a case of mongolism. The child also had a heart defect. Hellbrugg (1952) reported upon an instance in which the mother had hepatitis in the fourth week. Her infant exhibited mental retardation, microphthalmia, coloboma, choroiditis, and microgyria.

Schacter (1954) observed two pregnant women with malaria. The infant of one patient was an imbecile. The infant of the other mother was profoundly retarded.

Crosby et al (1951) observed hydrocephalus in an infant who contracted meningitis in utero.

The gravity of the defects which have been described certainly suggests that a cause and effect relationship may be present. However, whether the occurrence of the defects in these children was fortuitous, or was related to the ill health of their mothers, is difficult to determine, due to the fact that the observations are retrospective rather than prospective in nature.

Douglas P. Murphy, M.D., obstetrician, Farris Institute for Parenthood, Philadelphia.

Another difficulty exists when attempting to assess the role of a maternal disease as a cause of fetal injury. This concerns the nature of the pathological condition of the infant. There is great variability in the nature of the disturbances which have been observed in the infants of mothers who have had even the same disease.

In addition to the diseases just discussed, there are other maternal conditions that are charged with being causes of fetal damage. These include isoimmunization with the RH blood factor and defects in the blood clotting mechanism. The question has been raised, also, as to whether the infant may not be damaged by the toxemia of pregnancy.

Natal Causes of Mental Retardation

Some of the factors operating during labor and delivery for fetal injury, are under the control of the obstetrician, some are beyond his control. One of the latter is the vitality of the fetus.

The full term infant usually has greater vitality than the premature one, but even at full term, certain infants exhibit poor vitality. This might very well be a factor in the etiology of mental retardation, since such infants do not withstand the forces of labor as well as do infants with normal vitality.

Another natal factor, beyond the control of the obstetrician, is interference with the circulation of the umbilical cord. Prolonged, or repeatedly intermittent pressure upon the umbilical cord during labor may reduce the oxygenation of the higher cerebral centers to a point where it may lead to permanent cerebral damage. If this situation is recognized early enough in labor, it may be possible to terminate it by cesarean operation, and thus prevent irreparable damage to the infant. If discovered late, the outcome will be more grave, for the infant must be extracted by the vaginal route. The cerebral injury produced by the interference with the cord circulation, plus the damage which may result from a rapid forceps extraction, may be more than the infant can stand without suffering damage.

The forces of labor may be abnormal, with uterine contractions too powerful or too weak. Tumultuous uterine contractions, resulting in an extremely short labor, can injure the fetus or even lead to its death. Such injuries result from the sudden reduction in intracranial pressure which occurs as the child's head emerges from the vagina.

A factor under the control of the obstetrician is the kind and amount of sedation administered to the mother during labor, and the time of its employment in relation to the time of delivery.

An excessive amount of an analgesic drug may depress or inhibit the infant's respiratory mechanism following delivery to such a degree that anoxia will cause either death or permanent cerebral damage. The improper administration of general anesthesia at the time of delivery may add to the insult initiated by the unwise use of the anelgesic employed during labor.

The method which the obstetrician elects in order to deliver the infant may be a factor. If it is decided to deliver the infant by the vaginal route, rather than by cesarean section, the infant may be subjected to forces which it cannot withstand, including the force necessary to drive the head through the pelvis, and the force required to extract it with instruments. The child may survive, but there is a great chance that it will be damaged.

It has been stated that between one and two per cent of all infants die as a result of head injuries. It is believed by some observers that one-third of all deaths within two weeks of birth are due to birth injury. The commonest gross evidence of serious birth injury is cerebral hemorrhage usually occurring in the meninges where a hematoma forms which causes compression of the brain. If the infant's head fits too tightly in the maternal pelvis the head may experience a profound change in shape. There may be sufficient over-riding of the parietal bones again to create a serious compression of the cerebrum.

The absence of clinical symptoms of birth injury does not dispose of the possibility that injury may have occurred, since a large percentage of children who are later discovered to be defective, have shown no evidence of injury at birth.

The Value of the Obstetric History

In many cases the mother of the retarded child will state that she experienced a difficult delivery. There is a tendency for those concerned to assign the cause of the child's mental condition to injury at the time of birth, especially if no other more likely cause can be discovered. From the viewpoint of the obstetrician the statement of the mother that the birth was a difficult one is not enough.

While the best maternity records are to be found in the hospitals attached to the schools of medicine, even these are usually far from adequate for determining relationship between the birth process and the subsequent development of the child.

If we are to acquire information of any value for the purpose of determining what role labor and delivery actually play in the etiology of mental retardation, it will be secured only through the medium of a carefully conducted prospective study.

It will be necessary to record every detail of a large series of labors and deliveries. This should be done by trained observers who can follow each labor from beginning to end, 24 hours a day. It is most essential that the observers have no responsibility whatever for the care of the patient, in order that their attention can be given solely to the recording of what is taking place. The observer must make a careful record at frequent intervals, of the progress of the mother throughout her labor, and of the treatment she receives. Equally careful records must be made of the fetal status during labor and of the infant's condition on delivery. Such a study should be followed by periodic examinations of the infant at appropriate intervals during its immediate postnatal life. This in turn, should be followed by mental and physical examinations at appropriate intervals in the following years.

Preventability of Birth Injuries

While not all birth injuries are preventable, a large proportion of them can be attributed to lack of training, experience, judgment and skill on the part of the obstetrician. Labor is complicated in only about 10 to 20 percent of cases, and the newly licensed obstetrician may have had little or no experience with complicated cases.

For many years, little or no progress was made in improving maternity care. At the present time, much progress is being made. Already it has greatly reduced maternal mortality, and is also at the same time reducing the number of cases of fetal mortality and morbidity. This is due in large part to the following factors:

1. The general public, through the lay press, has been alerted to the need and is demanding better care.
2. The number of women receiving better care is constantly increasing.
3. An increasing number of women are being delivered in hospitals.
4. An increasing number of hospitals are being staffed with trained obstetricians and physician anesthetists.
5. More and more obstetricians are receiving post graduate training in obstetrics.
6. Medical societies have set up committees to study the causes of maternal and fetal deaths, in order to discover preventable causes, which is the first step leading to their prevention. If the psychologist, in investigating the cause of a case of mental retardation, assumes that it probably has an organic basis, he should acquaint himself with all possible causes which might operate during either pregnancy or labor. The list of these causes should be checked with the best possible sources of this information. If this list is nct checked carefully, he may overlook the cause of the mental retardation occurring in his patient. The list should include information upon:
   a. The nature and time of occurrence of every disease taking place during pregnancy.
   b. The estimated size of the fetus at term.
   c. The quality of the uterine contractility throughout labor.
   d. The details concerning the administration of

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sedative drugs during labor and of general anesthesia during delivery.

e. The occurrence of fetal distress during labor and delivery.
f. Maternal hemorrhage during labor.
g. The length of the second stage of labor.
h. The method of delivery.
i. The size and general condition of the infant at the moment of birth.
j. The interval between delivery and the establishment of normal respiration.
k. The condition of the infant during the days immediately following its birth.
l. The Rh blood reaction of the parents.
m. Errors in the blood clotting mechanism.

Although it may be possible to secure adequate information upon all of these factors, the chance of being able to do so is not very great. In any event, the attempt should be made. Since any one of a number of factors operating during labor might cause mental damage, the statement of the mother that she experienced a difficult one has little, if any, value. The obstetrician should be interviewed and the hospital record of the birth of the patient should be examined.

Circumstances peculiar to the birth process may cause mental deficiency in the offspring without at the same time producing gross physical damage. The evidence for this assumption requires confirmation. Thus, a prospective, carefully conducted study of an adequate number of pregnant women, and their offspring, would add greatly to our knowledge in this field. If such an investigation demonstrated a clear-cut cause and effect relationship between the birth process and mental retardation without other damage, it might, at the same time, help to identify those components of the birth process which are responsible.

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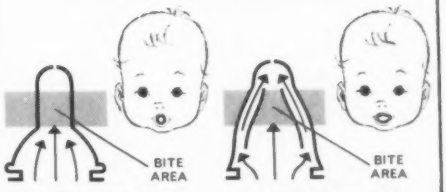

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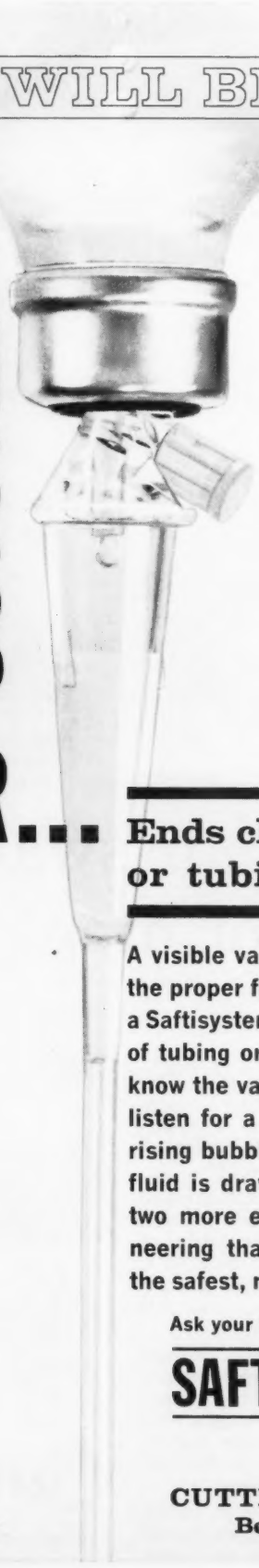

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U. of Missouri Eye Bank Supplies Donor Tissue

By John A. Buessler, M.D.,* and Garth S. Russell, M.D.#

Because an increasing number of ophthalmologists are being trained in transplantation technics and are practicing not only in major medical centers, but in less urban areas, a readily available supply of donor eye tissue in their own communities is necessary to allow them to function effectively.

To facilitate the development of such a supply, the University of Missouri, with the volunteered sponsorship of the Missouri Lions Club, established facilities for the collection, preservation, and distribution of donor material at its new medical-center teaching hospital in Columbia, Mo. The Lions Eye Tissue Bank of the University of Missouri has now been successfully operational for almost a year.

In addition to being equipped as a tissue-processing center, the bank stands ready to cooperate with any of the many eye banks already in existence, and has inaugurated a program to encourage the establishment of additional eyebanking facilities wherever practicable throughout Missouri.

Because almost all of the eye banks in this country are concerned exclusively with the collection and distribution of fresh tissue, the medical justification for the establishment of this eye-tissue bank was to provide a much-needed laboratory and production unit for the preservation of eye tissue in the central United States.

As is well known, the very limited storage time permitted by fresh eye tissue results in a fair amount of it being lost through spoilage and through its inability to be conveniently shipped long distances or to relatively inaccessible communities. Other effects of this limited storage time are the lack of ready availability of fresh tissue for emergency cases and the restriction of its use by qualified ophthalmologists who are not conveniently situated near a medical center or a fresh tissue eye bank. As a result, most donor eye tissue is presently used for strictly elective operations, and the patient is held on stand-by call for immediate admission to the hospital if and when fresh material becomes available.

This situation is the reverse of what it could become if modified in part. The eye tissue could be in stand-by storage for immediate use if and when a patient should need it for either an emergency or elective procedure. That the present status of tissue preservation methodology and utilization has now made possible the satisfactory achievement of this objective may be more adequately judged by a review of developments in this field.

I. Historical

A. *Corneal Grafting:*

Although there is some question as to precisely who first envisioned the clinical application of corneal transplantation, Reisinger, in Germany, as early as 1824, proposed the replacement of opaque human corneas with transparent corneas from animals. For this procedure, he coined the word "keratoplasty," a term used today for all types of corneal transplant surgery. Reisinger, however, limited his own surgical attempts in this field to experiments on rabbits, and the results were only partially successful. His ideas were sufficiently revolutionary that they prompted one of his colleagues, Dieffenbach, in 1831, to point them out as the "most audacious fantasies, and it would be the highest reward of surgery if this operation succeeded."

Nevertheless, his reports stimulated the interest

Fig. 1. Penetrating graft.

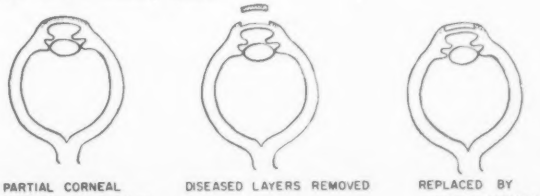

Fig. 2. Lamellar graft.

*Professor and chief of ophthalmology, University of Missouri Medical Center, Columbia.
#Director, Lions Eye Tissue Bank of the University of Missouri, and research associate (ophthalmology), University of Missouri Medical Center.

of many ophthalmic surgeons so much that the medical faculty of Munich in 1830 offered a prize for work in keratoplasty. This provided the impetus for more experimentation, and Bigger, in 1831, published the first reports of successful corneal grafting between animals of the same species.

There followed much work down through the years, but it was not until 1906 that Zirm of Germany reported the first successful full-thickness corneal graft from one human to another. Although this proved that corneal homografting in humans was possible, no dependable source of donor tissue was available until Filatov, working at the Odessa Medical Institute in the early 1930's, demonstrated the usability of corneas obtained from cadavers.[1, 2]

B. *Vitreous Transplantation and Implantation*:

The vitreous humor in the eye, like so many other tissues in the body, lacks the ability to replace itself; thus, when vitreous is lost or destroyed through surgery, disease, or accidental trauma, severe consequences may result. The most frequent complication from loss of vitreous is retinal detachment with subsequent loss of vision.

In 1890, Ford first reported on the beneficial effect of the withdrawal of cloudy vitreous and its replacement with aqueous from the anterior chamber. However, the procedure was beset with many problems. Deutschmann in 1909 reported his unsuccessful attempts at implantations of calf and rabbit vitreous into human eyes. In the intervening years until 1930, various ophthalmologists (Komoto, Elschnig, and Zur Nedden), using Ford's technic, attempted vitreous replacement with various substances such as saline, air, aqueous fluid, and cerebral spinal fluid.

The big breakthrough came in 1946, when Norman L. Cutler first reported his successful replacement of cloudy human vitreous with whole fresh vitreous from human donors. In 1957 Shafer reported the use of whole vitreous implants in over 100 eyes without serious reaction or the loss of a single eye. In addition, Shafer noted that in 64 eyes with retinal detachment supplementarily treated with vitreous implantation, there was successful reattachment of the retina in 29 (45 percent) of the cases. Vitreous implants and transplants are now acceptable surgical procedures, limited largely by the shortage of available donor material.[3, 4, 5, 6]

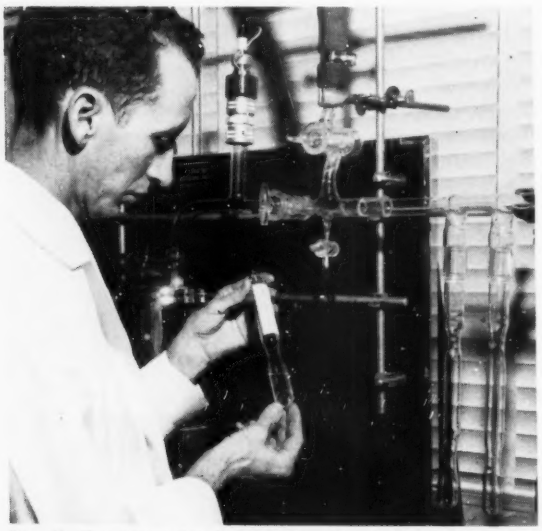

Fig. 3. Eye tissue bank technician Roy Wilson inspects a sealed high-vacuum specimen tube containing a processed human cornea in glycerin.

Fig. 4. Contents of eye enucleation kit with refrigeration thermos used in transporting donor eyes.

II. Transplantation Methods

A. *Cornea*:

There are two basic corneal grafting technics being utilized today. The full-thickness or penetrating graft requires removal of the host cornea through to the anterior chamber (Fig. 1). In this procedure, the donor cornea must be fresh, or if processed for preservation must retain the viability of its endothelial cells. Technically, the procedure is a difficult one, and the postoperative course is long and tedious. This type of grafting is used primarily for deep corneal scarring and for mild or moderate keratoconus (conical cornea). Statistically, visual improvement is obtained in approximately 40 percent of cases, with lessened vision resulting in 10 to 20 percent of the cases thus operated upon.

Split-thickness or lamellar grafting involves replacement of only the superficial layers of the cornea. The deeper layers of the cornea and Descemet's membrane are left intact in the host's eye (Fig. 2). Donor corneal material for lamellar grafting has been found not to require viable endothelial cells; hence "processed" or preserved tissue may be used. Fortunately, lamellar corneal transplantation is surgically less difficult than the penetrating type and has a greater number and variety of indications for its use.[7, 8]

B. *Vitreous*:

In patients' eyes in which the crystalline lens is still present, instillation of fresh or reconstituted donor vitreous is most generally accomplished by injecting it into the vitreous chamber by means of a syringe and needle via a small incision through the sclera in the region of the pars plana. When the host eye no longer has its lens, direct instillation may be made into the vitreous chamber via the pupillary space.[6, 9]

III. Tissue Preservation

A. *Cornea*:

1. **Refrigerated Storage in Moist Chambers at 4° C:** The simplest and presently most widely used

technic is the storage of the entire eye in a sterile, moist atmosphere at 4° C. The greatest advantage of this technic is its simplicity. This is counterbalanced, however, by the fact that the tissue is usable only up to 72 hours. McPherson and Stocker, by tissue culture in-vitro studies, found that viability was no longer dependable after that length of time. Nevertheless, this method of short-term preservation met the needs of the country fairly well for many years because of the relatively few men qualified to perform corneal transplantation surgery and because of the relatively limited variety of uses then made of donor corneal tissue.[10, 11, 12]

2. **Room temperature Storage in Glycerol with High-Vacuum Dehydration:** King, here in the United States, has developed a highly successful method of long-term corneal tissue preservation. Of great importance is the fact that storage is effected without refrigeration, thus enabling the material to be stocked at room temperature. The technic involves immersing the donor corneal tissue along with a rim of adjacent sclera in 95% commercial glycerin and subjecting it to high-vacuum dehydration. The specimen-containing tube is then sealed so as to retain the high vacuum and is ready for shipment via the mails and for virtually indefinite non-refrigerated storage[8, 12] (Fig. 3).

B. Vitreous:

The problem of long-time preservation of vitreous has been satisfactorily resolved with considerably less difficulty than that encountered with preservation of corneal tissue. The methods currently proffered are refrigerated storage of whole vitreous at 5° C. or—more desirably—room-temperature storage of lyophilized whole vitreous. Vitreous, fortunately, has been found to have the peculiar characteristic of apparent autosterilization, which enables whole vitreous to maintain sterility in sealed tubes at 5° C. storage for long periods of time. Lyophilized vitreous is stored as a dry powder and is reconstituted at the time of use by the addition of sterile distilled water.[6, 9]

IV. Operation of Missouri Bank

The recent development of long-term donor tissue preservation and the inauguration of a multi-bank system for fresh eye-tissue collection provide a practical approach to meeting the increasing demand for readily available and usable donor material.

Only through widespread cooperative efforts can donor eyes be obtained in sufficient supply to fill the increasing need for them. In keeping with this principle, the Lions Eye Tissue Bank program of eye-donor recruitment is being conducted with a view to benefitting all banks throughout the state. Its Eye Donor Registration cards have been made to specify that upon death of the registrant the eyes are to be donated to the "nearest eye bank or to the Lions Eye Tissue Bank of the University of Missouri."

Eye enucleation kits, transporting containers (Fig. 4), and permit and record forms are being furnished by the local Lions Clubs to the affiliated fresh eye-tissue collecting banks established as a part of this project. After each use, the enucleation kit is sent to the University of Missouri Medical Center in Columbia, along with the thermos shipping container and completed record forms. A newly packed and sterilized kit (Fig. 5) and a replacement thermos are then returned to the contributing affiliated bank by return carrier.

Fig. 5. Mrs. Janet Randell, R.N., supervisor of central supply and Mrs. Marilyn Schelp, R.N., eye operating room, prepare enucleation packs for ethylene-oxide sterilization prior to replacement in kits.

Indicative of the widespread cooperation encountered in this program is the fact that the Missouri State Highway Patrol has volunteered transportation for the fresh donor eyes by relay via its usual patrol routes from any area of the state in which other shipping facilities are inadequate.

At the present time, several recently inaugurated affiliated banks are operational. Together, these banks have already constituted a good source of material for both local utilization and for redistribution. The eyes thus collected have been used as fresh material or have been processed for storage as preserved tissue. Their success has depended in large part upon the interest and generous professional support given them by the local physicians and hospitals throughout Missouri.

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Wrapping Surgical Packs in the Laundry

By Vivian Warren, R.N.*

It pays to make surgical packs in the laundry, we are convinced after seven years experience with this method at the White Memorial Hospital, a 252-bed hospital in Los Angeles.

Before this system was adopted, all supplies and packs were assembled in the operating-room workroom—in a space that not only was inadequate for such work but also was needed for operating-room equipment. After considerable thought we decided that the most logical place in which to make these bundles was at the source of supply—the laundry.

Two major factors had to be considered in making this change: (1) the need for adequate space, either in the laundry or in the adjoining sewing room, and (2) the necessity for teaching untrained personnel to be competent in the proper folding of linen and in the following of precise specifications in making up the bundles.

It was decided, after some consideration, that the laundry workers could learn "bundle-making" much more easily in the operating-room workroom. After one month of indoctrination these workers could assemble and wrap packs of various types by following lists of the specific articles put into each of the 13 different packs used. When the laundry workers were able to assemble packs effectively, the operating-room personnel were freed for more complex duties.

Now each day the operating room sends the laundry a list of its needs for the following day. This eliminates excessive inventory of linen in our sterile supply cupboard. Six hundred operations a month are performed in the hospital. At present it requires 60 hours a week for the laundry personnel to fold linen and make the packs. This work is done in a 10′ x 20′ floor space in the laundry. After the packs are assembled, the laundry sends them to the central service department to be autoclaved.

Thorough planning, good supervision, and effective communications will make this departure from usual O. R. procedure an innovation which will improve efficiency and cut cost of operation by:

(1) Releasing trained O.R. personnel for more skilled, technical duties.

(2) Limiting the extra handling and refolding of linen.

(3) Assuring better production work.

(4) Providing for better housekeeping in the operating room, by the elimination of lint.

(5) Allowing vitally needed O.R. space to be used to better advantage.

(6) Making it possible for linen to be checked and replaced immediately.

Another part of our program which we believe has added to our efficiency is the use of 13 specified surgical packs instead of three or four major and minor packs.

The contents and costs of the 13 packs are listed below. The cost of each includes wages of personnel and replacement cost of linen, based on 200 uses before replacement is necessary.

All linen is placed in order of its use. The folded towel is placed on the bottom of a pack so that the pack can be lifted and put on any area of the table.

Winged Laparotomy Pack—cost, $1.30
(Wrap in double sheet)
1 towel opened in half
1 laparotomy sheet
5 surgeon's towels
1 set incision pads (field cloths)
1 suture bag
20 4x4's
20 Rondic sponges (we call them "stick sponges")
10 laparotomy sponges
1 ABD
1 small Telfa
2 Mayo covers
6 washcloths

Thyroid Pack—cost $1.78
(Wrap in double sheet)
1 towel opened in half
7 surgeon's towels
1 special thyroid sheet
2 plain sheets
2 surgeon's towels
1 plain sheet
20 4x4's

*At the time this article was written, Miss Warren was operating-room supervisor, White Memorial Hospital, Los Angeles. She is now operating-room supervisor, California Lutheran Hospital, Los Angeles.

5 lap sponges (we call them tapes)
1 Telfa
1 ABD
2 Mayo covers
1 suture mitt
6 washcloths

Head Pack—cost, $1.78
(Wrap in double sheet)
1 towel opened in half
2 surgeon's towels
1 head drape with 3 towels folded together
20 4x4's
1 Mayo cover
1 suture mitt
6 washcloths

Brain Pack—cost, $1.51
(Wrap in double sheet)
1 head towel
1 special sheet
1 brain sheet
1 Dr. Vogel's pad (a quilted pad that fits a special table for craniotomies)
1 plain sheet
1 surgeon's towel
1 double sheet
4 surgeon's towels
50 4x4's
1 Telfa
1 suture mitt
1 Mayo cover
6 washcloths

Rhinoplasty Pack—cost, $1.69
(Wrap in double sheet)
3 surgeon's towels
1 head sheet with two towels folded together
2 ENT sheets
7 surgeon's towels
20 4x4's
2 Mayo covers
1 suture mitt
6 washcloths

Vein Pack—cost, $0.93
(Wrap in double sheet)
1 towel opened in half
1 special sheet
8 surgeon's towels
1 plain sheet
20 4x4's
1 Telfa
1 suture mitt
7 washcloths

Lithotomy Pack—cost $0.79
1 surgeon's towel
1 rectal sheet
2 leggings
5 surgeon's towels
1 perineal pad
1 bowl
4 washcloths

Breast Pack—cost, $1.92
(Wrap in double sheet)
1 towel opened in half
4 surgeon's towels
1 breast sheet
4 surgeon's towels
1 bath towel
3 surgeon's towels
1 plain sheet
10 Rondic sponges
10 tapes
20 4x4's
1 ABD
1 Telfa
2 Mayo covers
1 suture mitt
6 washcloths

Orthopedic Pack—cost, $1.90
(Wrap in double sheet)
1 towel folded in half
3 surgeon's towels
1 special sheet
1 split ortho sheet
2 surgeon's towels
1 head sheet
1 special sheet
1 plain sheet
10 tapes
20 4x4's
1 Telfa
1 head sheet
1 suture mitt
6 washcloths

Chest Pack—cost, $2.00
(Wrap in double sheet)
1 towel opened in half
4 surgeon's towels
2 special sheets
3 head sheets
4 surgeon's towels
1 suture mitt
1 large Telfa
20 4x4's
1 large pillowcase
10 Rondic sponges
8 surgeon's towels
1 large Mayo cover
1 Mayo cover
6 washcloths

Eye Pack—cost, $1.32
(Wrap in double sheet)
1 special sheet
1 head sheet with 2 surgeon's towels
2 surgeon's towels folded together
1 eye drape
4 surgeon's towels on top
20 4x4's
5 2x2's
4 surgeon's towels
1 Mayo cover
1 suture mitt
6 washcloths

Cystoscopy Pack—cost, $0.39
1 drape sheet with two holes
2 cysto leggings
1 gown
1 hand towel (all our hand towels are turkish toweling)

Gown Pack—cost, $0.17
1 medium gown
1 hand towel

Clinical Sessions Probe Delayed Surgery, Stabilization

More than 3,000 surgeons attended the 26th annual congress of the North American Federation of the International College of Surgeons, held recently at Chicago's Palmer House. TOPICS presents abstracts of selected papers delivered during the meeting's clinical sessions.

Lesions Cause Return of Symptoms After Prostatectomy

John C. Campbell, M.B., F.R.C.S., research assistant, section of surgical research; *Laurence F. Greene, M.D.*, section of urology; Mayo Clinic and Mayo Foundation, Rochester, Minn.:

The prime object of any surgical operation is to relieve the symptoms of which the patient complains, and, when possible, to assist in a cure of the underlying disease. Moreover, the relief from symptoms should be long enough to justify exposing the patient to the morbidity and mortality rates associated with the operation.

Occasionally, the respite gained from prostatectomy is brief. More usually, however, the patient makes an initially good recovery but within a year experiences a renewal of the symptoms of frequency, straining, and urgency, along with the narrowed urinary stream which brought him to seek relief in the first place. The most frequent factor involved in recurrence of symptoms after an apparently successful prostatectomy is stricture of the urethra, following trauma from excessive dilatation to accommodate a wide-caliber operating instrument, or the use of a large indwelling catheter for postoperative drainage. The poor postoperative result is caused by the formation of a diaphragm of scar tissue at the vesical neck.

A review of literature available on the subject showed that authors have for years been plagued by this postoperative scarring and stricture of the vesical neck, and that although many factors have been shown to have supporting roles in this drama, none was categorically labeled as the villain of the piece. Among these factors were the normal and postoperative anatomy of the region, the nature of the disease process in the prostate itself, the presence of infection, and the mechanism of healing.

After noting the confusion of opinion arising in the literature, our attention was turned to material available locally for study. An arbitrary time period was selected, and the total number of transurethral prostatectomies were plotted on a yearly basis.

From a study of the follow-up data of these patients, a paradox became apparent. The more proficient the operating group became at performing resection, the higher was the incidence of contracture and diaphragm formation at the bladder neck. We then decided to refer the problem to the laboratory for investigation in experimental animals.

Thirty-two dogs were used in the study, 23 male and nine female. Preoperative excretory urograms and retrograde urethrograms were made for each dog. Six dogs died within 10 days of operation, and two died later. Of 18 surviving male dogs, 13 had lesions at the vesical neck. Two of these survivors had a block resection performed. Stenosis developed in 13 of 16 dogs on which a deliberately stenosing operation had been carried out. Stenotic lesions developed in six of the eight surviving female dogs.

In no instance was prostatic tissue resected. Therefore we believe that we may correctly deduce that excision of the fibromuscular tissues of the bladder neck is alone sufficient cause for the development of contracture at the neck, since it produces slow healing by granulation, and that contracture at the vesical neck is in no way related to prostatic disease of any kind. A strict parallel can be drawn between these animal experiments and the situation in the human subject.

'Delayed Emergency' Surgery Effective in Wound Treatment

Marc Iselin, M.D., chief surgeon, Hospital of Nanterre, and consulting surgeon, American Hospital, Paris, France:

Contrary to the rules learned early in a medical career, which stated that the sooner the surgery was performed, the better the result, we have found the "delayed emergency" operation feasible in treatment of wounds of the limbs. Use of antibiotics has increased the time between the injury and the pullulation of bacteria.

When a patient comes to the hospital with an in-

jury of the hand or leg, he is not operated on immediately, but is put to bed and prepared locally and generally as follows:

Local: The limb is bathed in a solution of quaternary ammonium, cleaned, and after about 15 minutes splinted and wrapped with a dressing soaked with the quaternary.

General: Threefold preparation includes the administration of antibiotics (penicillin and streptomycin routinely); maintenance of protein balances in water and ionic blood, according to the severity of the trauma and the reaction of the wounded; and the alleviation of stress via the use of calming agents.

The dressing is removed the next day, the wound is again bathed with the quaternary, and the limb is dressed and immobilized. When the skin is perfectly clean, and when the patient is quiet and his condition warrants, the operation may be performed.

The minimum delay, in my opinion, is two days for the clean wound. For crush injuries, four days is the average time. For the patient who arrives at the hospital with a wound already infected, a longer delay is necessary to master the infection.

The technic has several advantages. The danger of wound infection is considerably lessened. The difficult problem of wound excision is made easier, since necrotic tissue becomes dark in two or three days, while the healthy tissue remains pink. The operated parts, properly splinted, without infection and without secondary necrosis do not develop edema. Healing time is shortened, and healing is of better quality.

Surgical Management of Spinal-Cord Injuries Aids in Stabilization

Alice L. Garrett, M.D., Rancho Los Amigos Hospital, Downey, Calif.:

The number of patients with spinal-cord injuries is increasing yearly. At the same time, survival rates for patients with these injuries are also rising. During the first 30 days after injury, a fatality rate of five to 10 percent for paraplegics and 10 to 30 percent for quadriplegics has been determined, with the lowest figures occurring in the youngest age groups.

Since these cervical-cord injuries occur most often in young adult males, and since the incidence of such injuries is increasing, the rehabilitation of these patients is a growing problem.

Most injuries are at the level of C5-6. Before a fully active physical program can be started it is necessary to establish the fact that the vertebral injury is stable. If excessive motion is present at the site of injury after three months of immobilization, surgical stabilization of the involved vertebra is indicated.

When injury results in the loss of function of the hand, a complete hand splint may be used. The entire hand splint may be replaced by surgically stabilizing the same joints and by performing tenodesis of both the flexor and extensor tendons. An opponens bone block is done to hold the thumb away from the palm and opposed to the two radial fingers.

The next highest level of injury to the spinal cord leaves a patient with no wrist control, but with functioning biceps and deltoid. Sensation in the hand is absent. A flexor hinge finger-driven hand splint may be used to immobilize all but the metacarpal-phalangeal joints. The artificial muscle flexes metacarpal-phalangeal joints and a spring extends them. The joints may be surgically stabilized as previously described, and the hand splint can then be considerably reduced.

Quadriplegics tolerate surgery well if certain precautions are taken to compensate for their disabilities. Since abdominal musculature is absent, manual compression of the chest to aid coughing will help eliminate postoperative respiratory infections which increase the surgical risk in these patients. Vital capacity should be determined preoperatively.

Intercostal musculature is absent, and if the chest is rigid, diaphragm action may be diminished. If respiratory capacity is reduced, as it is in those with higher lesions, respiratory aid may be necessary. Dehydration is poorly tolerated by these patients because of disturbed renal function and because of profuse sweating. By insuring adequate intake with intravenous fluids, this problem can be avoided.

Hypertension can be controlled during surgery by drugs if the anesthesiologist is aware of the possible rise in blood pressure as a consequence of the surgical procedure.

Closed Hemorrhoidectomy Lines Anal Wall with Flexible Skin

Lynn A. Ferguson, M.D., Grand Rapids, Mich.

Following a period of popularity of treatments by nonsurgical procedures, consisting mainly of a variety of injections, electrical treatments and other treatments directed toward shielding the patient from pain and discomfort, hemorrhoids are now treated by sound surgical methods aimed at the

"Retired surgeon."

elimination of veins and restoration of function.

Certain criteria are necessary if good physiological function is to be expected. The anal canal must have a skin lining. All submucosal and subtegumentary veins must be removed down to the muscle layer, and the redundant folds of mucosa must be removed or obliterated. The skin must be pulled well into the anal canal, and anchored when closed over the defect. Inflammatory pectin scars and contractions must be dealt with, and the whole new outlet must be smooth, elastic, and flexible in keeping with the same skin factors elsewhere on the body. This last is a variable, and poses a problem.

As in any surgical procedure of major importance, an accurate fact-finding history must be recorded and a painstaking physical examination carried out. Hemorrhoidectomy must always be preceded by sigmoidoscopic examination and a colon film, if one wishes to avoid the embarrassment incident to the finding later of a proximal neoplasm.

The degree of protrusion and/or prolapsus must be accurately determined, and the matter of bleeding and thrombosis must be estimated.

At the time of operation, the patient is placed in the modified Sims' position, which eliminates the swelling and distortion of the tissues incident to the lithotomy position. A Ferguson-Hill retractor is introduced, and the right posterior unit is attacked first. The veins are swept into place and the skin is grasped with Allis forceps and pulled taut. A scalpel is used to cut the skin, directing it from inside out in the form of a "V" incision with the apex pointed outward. The dissection is carried upward over the muscle by both blunt and sharp dissection until an adequate pedicle is fashioned. The hemorrhoid is then sheared with the scalpel and the defect is sutured, bringing the skin well inside.

Small bleeding vessels at the margin of the muscle have been clamped during the procedure, but only the persistent ones are tied. The skin is now sutured all the way out to the tip of the "V", and the skin is smooth and flexible.

The closed hemorrhoidectomy lends itself well to the elimination of accompanying ulcers, thromboses, hypertrophied papillae, and papillomata, as well as associated pathology. Hemorrhoidal varices are removed completely, and the anal canal is lined with true skin which is elastic and adequate.

Post-operative distress is minimal, and hinges somewhat on manipulation of tissues and use of a minimal amount of suture material, plus the individual tendency to develop connective tissue change.

Hospital Humor From Abroad

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Psychological Aspects of Cancer Patient; Surgeon's Guideposts

Edward M. Litin, M.D., faculty, University of Minnesota graduate School; consultant in psychiatry, St. Mary's Hospital and Mayo Clinic, Rochester, Minn.:

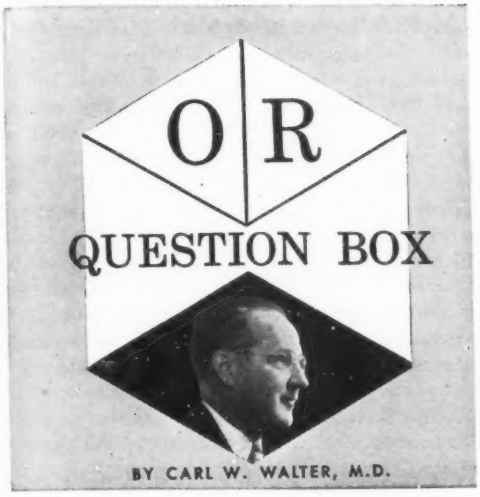
Sensitive surgeons and internists, who have become increasingly aware of the importance of psychological factors, realize that cancer not only makes serious attacks on the body, but also invariably affects the emotional well-being of the patient and his family, and other persons close to him.

The initial question of a psychological nature that looms is whether to discuss the diagnosis with the patient. Each patient has his own set of characteristics that determine how he will react to the overwhelming knowledge that he has cancer. There are those who face such knowledge with great objectivity and courage. Others are thrown into panic or depression, and still others refuse to accept it at all. There are guideposts a physician can use to prognosticate how his patient will react.

Obviously, a busy surgeon cannot be expected to do a detailed psychiatric history on every patient who has cancer to determine the suitability of informing the patient of his status. Some points, however, should be borne in mind as being indicative of a stable personality and one who can accept a rather frank and truthful discussion of the situation without emotionally decompensating.

The history of successful adaptation to previous periods of stress, and of a good current adjustment and relationships with other persons is of great importance. A successful marriage in which the partner is supportive and one with whom the patient can communicate freely and openly is a tremendous advantage. An obvious aid is the presence of a warm, sympathetic, mature physician who can enter into an honest, frank, doctor-patient relationship, and who can be depended upon to deliver the truth and a careful explanation.

If all these factors are present, the physician need have no hesitation about informing the patient that he has cancer and discussing it fully with him. If all or most of these factors are absent, there is some justification in withholding the diagnosis, since serious psychiatric complications would be a possibility.



Assisted by Dorothy W. Errera, R. N.

Q. As part of our instructions in caring for a patient with gas gangrene, we are advised to "fractionally sterilize" soiled linen before sending it to the laundry. None of us is familiar with the technic and would appreciate an explanation.

A. In 1876, John Tyndall, an English physicist, described a method for sterilizing solutions containing heat-resistant bacteria. These were heated to the boiling point five times. Between each heating, the solutions were held at room temperature for 10 to 12 hours. In theory, resistant bacterial spores that survived exposure to boiling were to change into heat-sensitive vegetative organisms during the incubation periods. Free-flowing steam from boiling water was used because equipment for steam sterilization was not available. The method became known as Tyndallization, or fractional sterilization.

You are being advised to expose linen to flowing steam (from what source I do not know) for 20 minutes on three separate occasions—allowing the load to rest between heat treatments for 10 to 12 hours. Thus, you are advised to accumulate heavily contaminated material for days on end and to rely on a questionable process to make it safe for disposal to regular treatment.

Tyndallization (fractional sterilization) is at best an erratic process, because spores will develop into vegetative organisms during the incubation period only if proper nutrients are present at the correct pH, with proper oxygen tension, and if there are no bacteriostatic substances present.

The technic has no more place in modern hospital practice than the historic carbolic spray. Fractional sterilization of dry goods, even if possible, would have to be done at 14-day intervals with the linen immersed in nutrient broth, because once spores are subjected to a sublethal dose of heat, it may take 12 to 14 days for vegetation to occur in ideal culture media.

The most resistant dry spore is destroyed by 13 minutes exposure to saturated steam at 250° F.—the microbicidal temperature achieved in the modern sterilizer. As steam penetrates a package or a bag of linen, it condenses, providing the moisture essential for sterilization, and the energy (heat) released by the change of state heats the package. The exchange of energy and concomitant condensation continue in the textile until the latter is heated to the temperature of the steam.

Heating spreads centripetally—that is, toward the center of a bundle or a package. Sterilization is achieved only if sufficient moisture has been deposited and sufficient energy liberated to heat all the material to 250° F.

If heating is not continuous (as in ordinary sterilizing practices), the outer wet shell of moist fabric cools between heating periods, and when next placed in the sterilizer, it must be reheated. This may take longer than the original heating cycle, and the inner layers or center may not be heated to sterilizing temperature. Even if fractional sterilization were practical for this purpose, it is unsatisfactory because there is no mechanism for accurately measuring exposure and penetration.

The hysteria among personnel prompted by a case of gas gangrene is unrealistic. The *Cl. welchii* responsible for gas gangrene is a gram-positive, spore-forming anaerobe found in dust, soil, sewage, water, fish, mollusks, milk, cheese, and the feces of man, domestic animals, and birds. The spores are widely distributed throughout nature and can often be cultured from air, dust, and equipment in a hospital.

Cross-infection with the organism occurs by the fomites route. Trauma, a lowered oxygen tension in a wound to allow spores to germinate, impaired blood supply, necrotic tissue, a foreign body, gross soil, and dirt are the components necessary for wound infection with the clostridia.

Good surgical technic with accurate hemostasis, careful wound debridement, consistently precise sterilizing practices, and sanitary housekeeping control the hazard of cross-infection.

What actually is the situation in the operating room, for instance, in which a wound is being excised?

It can be correctly assumed that organisms will be present on instruments, linen, and sponges, in blood and body exudates. In the vegetative form, the clostridia are easily destroyed by heat and chemicals. As spores, they are more resistant and are unaffected by sunlight, air or boiling.

The resistance pattern of the spores gives a clue to the efficacy of routine sterilizing technics. The spores in their dry state can withstand exposure to 176° F. for one hour and resist destruction by boiling up to 70 minutes. But, all spores are killed by exposure to dry heat at 320° F. for one hour or exposure to steam at 250° F. for 13 minutes.

Therefore, obviously adequate is the routine of disassembling a room after surgery, in which instruments and heat-stable articles such as gloves, suction tubing, catheters, and suction bottles are promptly terminally sterilized in steam at 250° F. for 30 minutes. In the cleanup technic, all linen (including gowns, scrub suits, and dresses which have become wet with solutions from the field) is

bagged in the room, with wet surfaces rolled toward the center to avoid wetting the laundry bag.

Spots of blood or pus on the floor and furniture are treated as soon as they occur with a slurry of calcium hypochlorite and tap water. Terminally, the floor and potentially contaminated surfaces of furniture, such as footstools, table bases, and shelves on which contaminated instruments have rested, are disinfected with a germicidal detergent.

Walls are not treated unless there has been gross soiling with poorly controlled suction or by a carelessly discarded sponge. Similarly, sterile supplies on open shelves at the periphery of the room need not be discarded or resterilized. The bacterial image on these is that of the room's normal population, and it is conceivable that some part of the pattern is already made up of clostridia.

Consideration of the characteristics of bacteria and the mechanism of survival and transfer emphasizes the absurdity of "quarantining" a room after gas gangrene has been treated. Blind conformity to this antiquated ritual creates the ideal situation for perpetuating the hazard; organisms easily destroyed in their vegetative state or when moist escape destruction by planned neglect. No amount of airing or sunlight will dilute the hazard of spores which take up residence in dust and dirt, awaiting the next surgical situation in which optimal conditions for growth may be present.

To return to the original question of care of contaminated linen: soaking soiled linen in disinfectants should be categorically discouraged. Splashing and spillage are impossible to avoid. Handling the linen frees enormous numbers of bacteria into the air. The action of many germicides is erratic, influenced by factors of protein soil, solubility, and water supply. Germicides should not be relied upon where more certain measures of bacterial destruction are practical.

With good equipment and intelligent management, laundering is a sanitizing process. Minimal standards call for water at 180° F. and exposure ranging to 50 or 60 minutes. Wash formulae include the use of alkalinizing and chlorine agents, both of which contribute to the bactericidal action of the wash water. Many modern laundry machines are equipped with steam injectors which make exposure of a load to boiling water simple and practical.

In communities where commercial laundries serve hospitals, investigation of the wash process should be undertaken by a member of the hospital staff. Education of the laundry manager and key personnel will usually elicit cooperation in rendering hospital linens safe for re-use.

If there is no escape from terminal heat sterilization of soiled linen, great care must be taken when loading the sterilizer to avoid contaminating the environment. Also, because waterproof laundry bags are common, access for steam must be guaranteed by loosening bag openings before sterilization.

Russian Stapler Stirs U.S. Surgery Circles

A group of Russian scientists caused a stir in medical circles recently when they visited several large U. S. cities with their suturing device that uses staples. One of the devices—there are 20 separate adaptations of the original design—is especially created to suture tiny nerves and blood vessels during surgery. Other adaptations have been used to tie off tissue after resections, and in the final skin closure after surgery.

Several large American medical centers are already using the device, which has been hailed as a boon to all surgery, but particularly for surgery in the poor-risk patient, who requires shorter anesthesia, because of its time-saving features. In a lung resection, the stapler, dispensing a series of tantalum staples, cuts the suturing time to two minutes or less, in contrast to the conventional method, which may require about 18 minutes.

During their stay in Chicago, the Russian medical scentists performed a lung resection on a dog to demonstrate the stapling apparatus. Here the visitors discuss the new device at Northwestern University Medical School. L. to r. G. A. Nikolaev, chief engineer of Amtorg Trading Corp.; William Merz, vice-president of V. Mueller & Co., which will market the machine in the U.S.; I. Surin, senior engineer at Moscow's Institute for Experimental Surgical Apparatus and Instruments, where the device was developed; Prof. Mikhail Ananyev, director; John M. Danielson, administrator, Evanston Hospital; Prof. Sarkis A. Mushegian, chief surgeon; and Nikolai S. Gorkin, chief engineer.

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When a foreign body such as a surgical prosthesis is inserted in the body, surgical trauma, infection, mechanical and chemical reactions can be anticipated. The mechanical effect increases in proportion to the size of the implant, but has been accepted in orthopedic surgery as a minor disadvantage when contrasted to the benefits for the patient.

Chemical irritation has been controlled in part by the use of high-alloyed chromium nickel steel (18 - 8) and chromium-nickel-molybdenum steel, but even implants of the latter show signs of corrosion when removed from the body.

Three types of corrosion are common to instruments and component parts used in orthopedic procedures: pitting, crevice, and galvanic. Environment is an important factor; chlorides, for example, are the most active corrosives in body fluids.

Stainless steels become passive—that is, they become covered with a film of chromium oxide and entrapped oxygen which offers protection against all corrosion except that caused by chlorides. When chlorides attack, punctate areas result, and pitting corrosion progresses rapidly. When oxygen is present in the corroding solution, the attack is accelerated. Living tissues with relatively high chloride and oxygen contents are excellent media for pitting corrosion of implants and instruments.

Despite superior passivity of metals in such appliances as Rush pins, Sven Johannsson nails, and Kuntscher nails, all are susceptible to corrosion from stress and cold working (bending, twisting, breaking, cutting) and from metallic transfers of guide wires, pliers, screwdrivers, or other instruments.

Corrosion in a classical bone plate, for example, is aggravated by strenuous cold working of the screw heads and transfer of metal from the screwdriver to screw head. When two different metals or alloys are in contact with crevices i.e., plate and screw—there is risk of corrosion of the metal which is less "noble." *(In chemistry, "noble" is used to describe a stable material resistant to the destructive effects of oxygen.—*ED.)

In this study, the corrosion-inducing effect of pressure of screw against plate was not evaluated as much as the relationship of the crevice to corrosion. Rods of 832M, 832 SK and 832 SL alloys* were tested in experiments approximating the clinical situation. Corrosion was minimal when contact was at a single spot and increased as the crevice became smaller—that is, as contact increased between two flat surfaces. Corrosion was most apparent with samples of 832M; moderate with 832 SK, and only slight with 832 SL.

The transfer of metal from various tools to plates and screws has been studied and reported elsewhere. In this report, the transfer of metal from various guides to a Vitallium nail was studied. Transfer of tool steel to Vitallium leaves the tool steel susceptible to galvanic corrosion, and rapid dissolution of the steel results. *(In the patient, these metallic ions are deposited in the foreign body bursa that forms about metallic implants. Electrolytic dissolution of bone in contact with the implant also proceeds until the the susceptible metal has disappeared.—ED.)*

Vitallium has been demonstrated to have superior resistance to corrosion, and in all the tests performed for this study, it remained corrosion-resistant except in a single instance in which a surgeon heated a plate before bending it to extremes of tolerance. In the experimental situation, a serious risk of gross corrosion accompanied the use of guides made of 832M; minute corrosion was common with 832 SK.

Annealed wire of 832 SL appeared to be so passive that it did not corrode on direct contact with Vitallium and titanium. However, the slightest damage from cold working resulted in galvanic corrosion.

The same risk and order of corrosion accompanied use of the metals with titanium.

Damage caused by marking stainless steel instruments and by careless handling was evaluated by stamping 30 letters on plates of the three steels under study and by making 60 deep stabs with two kinds of screwdrivers (both Stille-Werner; stamping tools used were not named).

The stamping process caused little corrosion of 832M, and surface damage was destructive only when deep. The 832 SL samples tolerated all attacks, deep and superficial, without any signs of corrosion.

Similar plates were then attacked with three types of drills: a high-speed steel drill, a nickel-plated carbon steel drill, and a Vitallium drill. Four holes were made on each plate with each type of drill. Two scratches were made on each plate—one with a chromium vanadium steel screwdriver and one with a surgical screwdriver (Stille-Werner). Steel shavings were removed, and the plates were tested for corrosion.

Every plate of 832M showed corrosion in at least one cavity; all but three of those fabricated of 832 SK showed corrosion, but there was no evidence of corrosion in any of the 832 SL samples.

*Correlation steel types:

Avesta Sweden	American Iron and Steel Institute
832 M	303
832 SK	316
832 SL	317

How DennisonWraps make major contributions to
Efficiency of Autoclaving Procedures

Better utilization of time and space **is the constant goal of all Central Service Departments. If you're interested in measuring the efficiency of your autoclaving operation, the following questions and answers bring out valuable information.**

Q. *Why do you stress the importance of rapid drying when you compare muslin with DennisonWraps?*

A. Because DennisonWraps dry approximately five minutes faster than muslin, busy central service departments have reported an extra autoclave load per day. This faster drying feature also has a safety aspect. You may have noticed that packages removed from the autoclave often feel warm and moist, indicating the presence of steam inside. Sudden exposure of such packages to the cooler room temperature raises the possibility of condensation and contamination.

Q. *What difference does it make whether I get muslin wrappers from the laundry or DennisonWraps from the storeroom?*

A. The difference is that YOU have efficient control of your wrapper supply at all times. When you have one case of DennisonWraps in use and one in reserve, you will never run out of wrappers. Your aides and your autoclave are always efficiently employed.

Q. *Why do you say that the non-bulky nature of DennisonWraps will increase Central Supply efficiency?*

A. First, consider your storage problem. You can store three times as many DennisonWraps as muslin wrappers in a given area. The more you can store, the safer your reserve supplies.

Then, too, packages wrapped in DennisonWraps are much more compact than those wrapped in muslin. This is particularly noticeable with small items like powder packets and medicine glasses. You'll agree that you can autoclave at least 25% more per load. The more you can autoclave at one time, the greater your efficiency and the lower your cost. And you can store 25% more in a given shelf space, too.

Q. *Why do you claim that DennisonWraps increase inspection efficiency?*

A. Muslin is so porous that it must be used in two layers. So, both layers must be inspected. Only the provision of good lighting from above and below will disclose broken fibers in the muslin. Since you need only one thickness of DennisonWraps for safe sterilization and storage, double inspection is unnnecessary.

Q. *Why do you say that the switch from muslin to DennisonWraps would reduce teaching time?*

A. Because you'd be teaching a familiar technique. Every new aide knows how to wrap gifts and parcels in paper. None has ever used floppy muslin as a wrapper. So, you need only show the prescribed wrapping techniques employed in your hospital.

Q. *Doesn't the stiffness of paper make wrapping more difficult?*

A. Not with DennisonWraps. Remember, they're double-creped to produce a ribbed texture. Because of their two-way stretch, they retain their shape when folded. No need to hold them firmly to prevent them from sliding out of position as with muslin.

Q. *How would you sum up the major differences between wrapping with muslin and with DennisonWraps?*

A. Increased efficiency all along the line. Your wrappers are always under your control. Since you need not unfold each sheet of DennisonWraps, you eliminate a whole series of costly motions. Moreover, it takes less time to wrap an article in paper than in muslin because folds do not slide away from aides' fingers. And, finally, because you have the right pre-cut size for each package, no time is lost folding under excess bulk as there is with muslin.

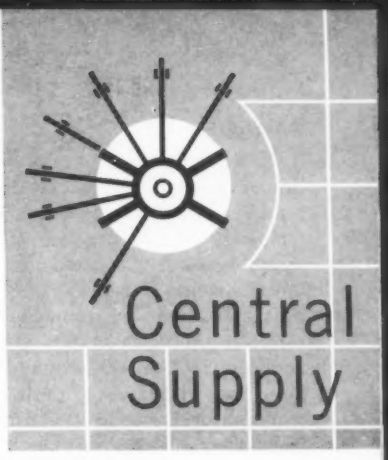
Q. *What's the most efficient way to get started with DennisonWraps?*

A. Get a free hospital evaluation kit and use it to conduct comparative tests. It contains DennisonWraps in the most-used sizes and forms: sheets, glove wicks, envelopes and cases, plus hospital reports on the safety, economy and efficiency of DennisonWraps. Ask your local hospital supply house . . . or address your request to Dennison Manufacturing Co., Dept. W171, Framingham, Mass.

FOR EFFICIENCY'S SAKE
insist on reusable

DennisonWraps

. . . identified by their exclusive hygienic imprint.



The Work-Station Concept

By John T. Lewis*

The work-station concept of central supply has been developed as a result of dissatisfaction on the part of hospitals with the inefficiencies of conventional central supply room installations. Time and motion studies revealed many planning mistakes which resulted in uneconomical work methods. Problems uncovered included:

(1) Frequent work-flow stoppages while central supply room personnel adjusted the operations of specific tasks to general-purpose counter and cabinet units.

(2) Inefficient work operations resulting from interior partitions.

(3) Difficulty of supervision resulting from relegation of various work operations to separate rooms.

These studies indicated the necessity of designing work stations with a particular function in mind, in order to afford the hospital central supply room the advantages of industrial work-flow technics. These stations, while maintaining their functional autonomy, should be positioned relative to each other so that there would be no interference in the work flow between stations.

The work-station principle offers many advantages, including:

(1) Efficient work flow—as a result of application of industrial work-flow principles to specific processing functions.

(2) Effective utilization of personnel—because the work-station design permits organization of individual processing tasks, thereby increasing worker output.

(3) Flexibility for expansion—unlike the concept of work at built-in counters, the work-station concept affords flexibility for future expansion of central supply room facilities.

To illustrate the work-station concept here, the central supply room renovation plan of the Cushing Hospital in Framingham, Mass. (Desmond & Lord, Boston, architects), has been used as a case study.

The department's over-all floor plan is shown in Fig. 1. It is well at this point to note the following general objectives of central supply room planning:

(1) Separation of the sterile and unsterile areas.

(2) Straight-line work flow of materials during the processing operation.

(3) Sufficient free space to permit easy passage and storage of mobile equipment.

(4) Separation of individual work functions into particular sections of the central supply room.

(5) Location of supervisor to attain optimum visual control of the processing and distribution operations.

Discharge Kit Cleanup

Because of the high degree of contamination associated with discharge kits, the planners thought it best, from both an aseptic as well as an esthetic standpoint, that these kits not enter the same work-station that handles needles, syringes, and other equipment. A separate work station has therefore been assigned for this function. The discharge kit cleanup area is located to the left of the central supply room entrance.

An area at the end of the work site is available for the assembly of discharge kits, which are then placed on an autoclave truck and transported directly to the autoclave area.

General Cleanup, Disassembly

Soiled materials, such as utensils, constriction tubes, needles, syringes, catheters, and trays, enter the department and are disassembled at the receiving counter of the cleanup and disassembly station, located in the general cleanup area (Fig. 2). Soiled linen is dropped into a portable linen hamper parked beneath the disassembly counter for return to the laundry. Paper and other disposables are discarded into a portable waste receiver parked at the disassembly station.

Disassembled components are washed and rinsed manually in the four wash-rinse sinks located on either side of the plumbing chase, which supports a water still as well as housing the plumbing required in the general cleanup area.

Syringes, constriction tubes, solutions, closure components, and various glassware are loaded in utility baskets and washed in the syringe and utility washer located to the right of the wash-rinse sinks. Tubing and catheters are washed on the tubing washer located over the sinks. Needles are washed in the automatic needle washer-rinser located at the rear of the cleanup unit.

All materials are given a final rinsing in distilled water, which is conveniently stored in Pyrex storage tanks mounted on both sides of the plumbing stack above the rinse sinks.

(Continued on next page)

*Sales manager, the Macbick Co.

Assembly

Clean goods used in tray and kit preparation accumulate at the assembly end of the cleanup station for pickup by aides seated at the kit assembly stations located proximate to the cleanup site. Packaging materials and other kit components are stored in the vertical storage towers at the end of the kit-assembly station, also within easy reach of the seated aides. String is suspended from the dispensers mounted on each of the storage towers.

Other accessories, such as scissors, elastic bands, and autoclave tape, are stored on the shelves located between the storage towers as well as on the tongue-like shelf which extends over the work counter, thereby dividing the station into two work sites. Visual record holders mounted on each tower contain descriptions of various kits and provide an easy reference for the working aides.

Completed trays and kits are pushed beneath an opening between the storage towers, and accumulate at the rear of the assembly station for future pickup by autoclave trucks, thereby eliminating the need to walk the completed kit to a temporary storage area.

Needles and Syringes

Syringes accumulate on the end of the disassembly counter and are loaded into baskets for washing in the syringe and utility washer. After a distilled-water rinse, syringes are assembled at the kit-assembly station prior to transportation to the autoclaves.

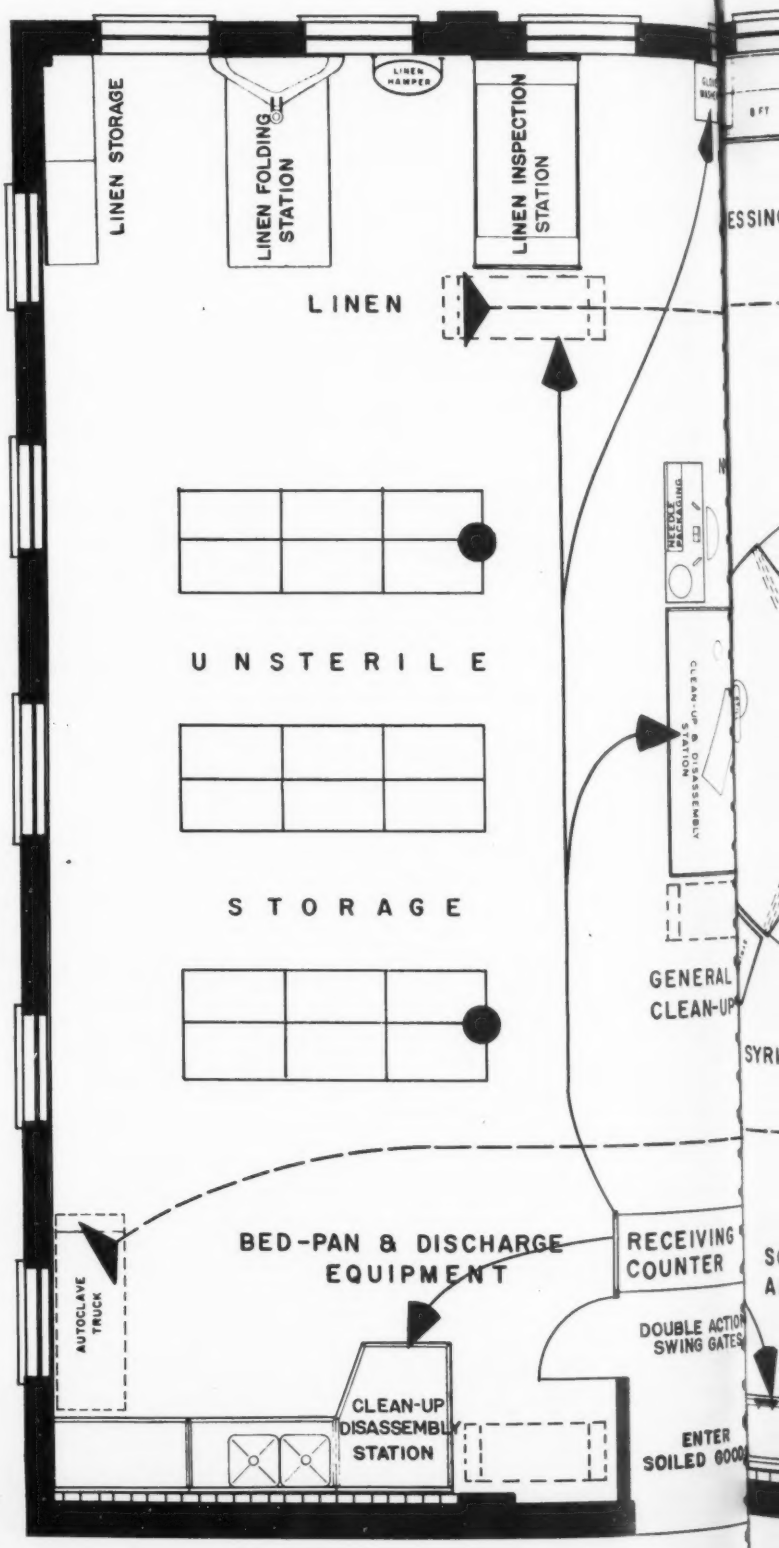
Needles also accumulate on the disassembly counter proximate to the automatic needle washer-rinser. After being washed and rinsed in distilled water the needles are packaged at a needle-packaging station located next to the needle-washer section of the disassembly counter. After packaging needles are transported to the autoclave area.

Gloves

Soiled gloves enter the central supply room and are transferred to the glove processing area (Fig. 3). After being machine-washed and dried the gloves are inspected at the glove-processing station and sorted by sizes into bins located at this

(Continued on page 90)

Fig. 1. Layout of central supply department, Cushing Hospital, Framingham, Mass.



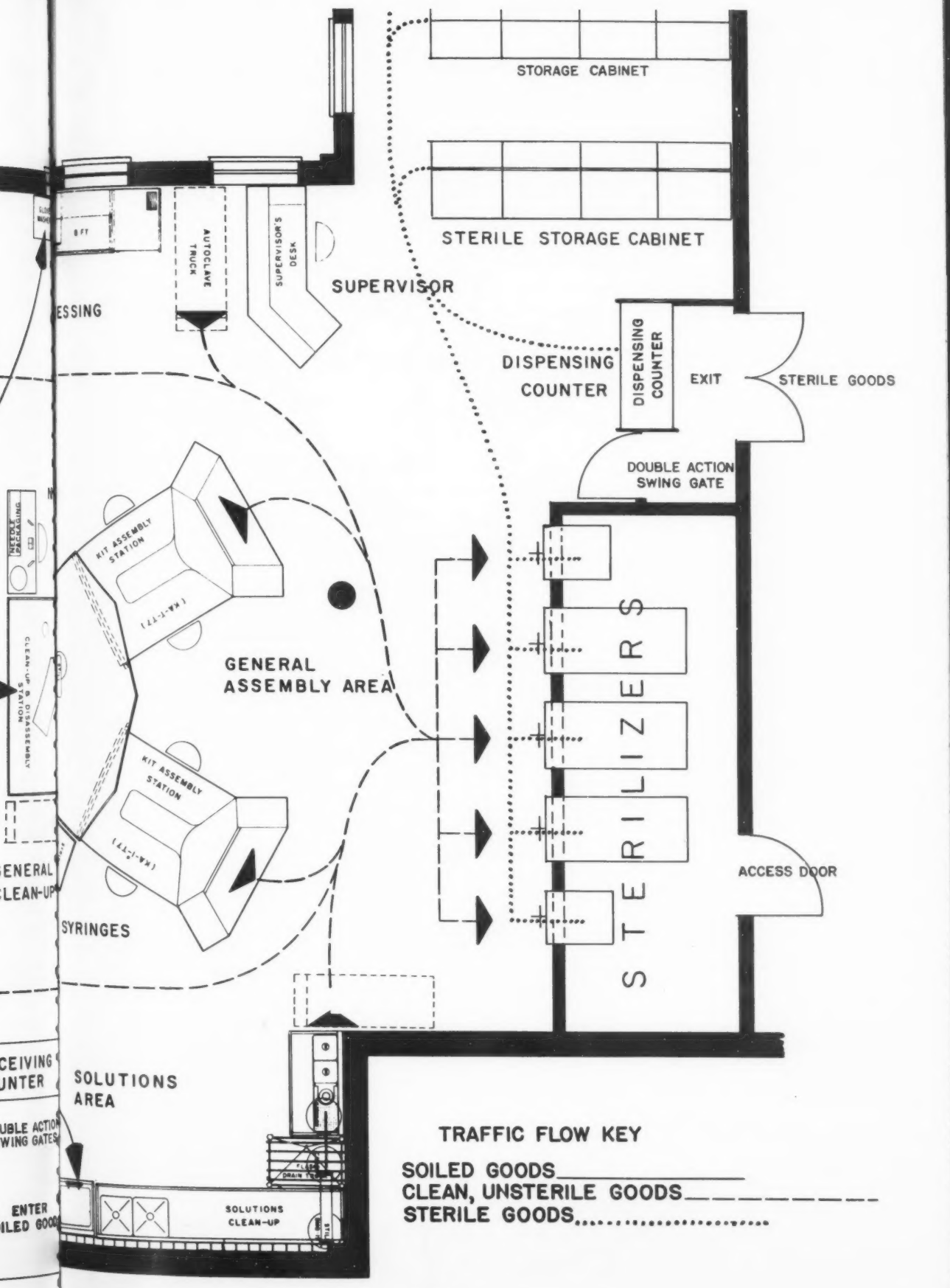

STORAGE CABINET
STERILE STORAGE CABINET
AUTOCLAVE TRUCK
SUPERVISOR'S DESK
SUPERVISOR
DISPENSING COUNTER
DISPENSING COUNTER
EXIT
STERILE GOODS
DOUBLE ACTION SWING GATE
KIT ASSEMBLY STATION
GENERAL ASSEMBLY AREA
STERILIZERS
ACCESS DOOR
SYRINGES
SOLUTIONS AREA
SOLUTIONS CLEAN-UP
TRAFFIC FLOW KEY
SOILED GOODS
CLEAN, UNSTERILE GOODS
STERILE GOODS

Fig. 2. Area for general cleanup and disassembly.

Fig. 3. Glove-processing area.

work station. They are then powdered by sizes, wrapped, and transferred directly to the sterilizers and then into sterile storage.

The glove-packaging station contains an integral suction, collection, and filtering system which collects lighter-than-air powder freed during the packaging operation. Powder-free air is then recirculated back into the room.

Linen

Linen arrives in linen hampers from the laundry and is transported directly to the linen area (Fig. 4) for inspection and folding. Included in this area are a linen-inspection station, an adjustable-height linen-folding station, a wall-mounted hamper, and proximate storage shelving.

Linen rejected during the inspection operation is placed in the hamper to be transferred to the housekeeping area for repair. Folded and inspected linen is sorted according to item on the linen-storage shelves prior to being used in the preparation of packs and wraps. Assembled packs are transferred from the linen area directly to the autoclaves and are then taken to the sterile storage area or distributed directly to the floors.

Solutions

Soiled flasks are disassembled at the cleanup counter of the general cleanup area, and the closure components are loaded into utility baskets for washing in the syringe and utility washer. Soiled flasks are transferred to the solutions area (Fig. 5), where they are washed in an automatic flask-washer.

After washing, the flasks are rinsed and inspected at the solutions cleanup sink located next to the flask-washer. Distilled water is conveniently stored in a Pyrex carboy located on a wall over the sink, with a direct connection to the portable flask-rinser.

Flasks are then inverted on the flask drain truck and transported to the flask filling and capping area. After being filled and capped, they are sterilized and subsequently transferred to the sterile storage area.

Supervision

The supervisor's desk is located so as to permit optimum visual control over the various work operations and autoclave cycles, as well as over the distribution of sterile supplies to the hospital areas (see Fig. 1).

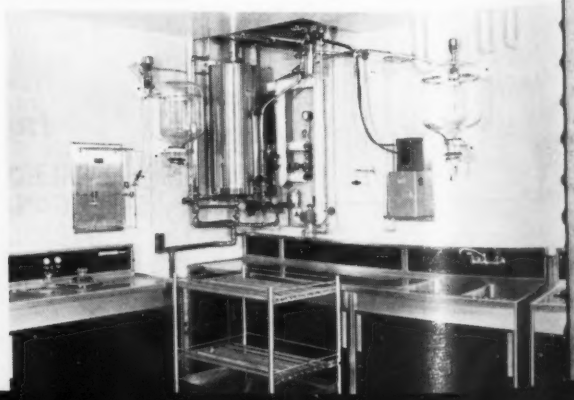
Storage

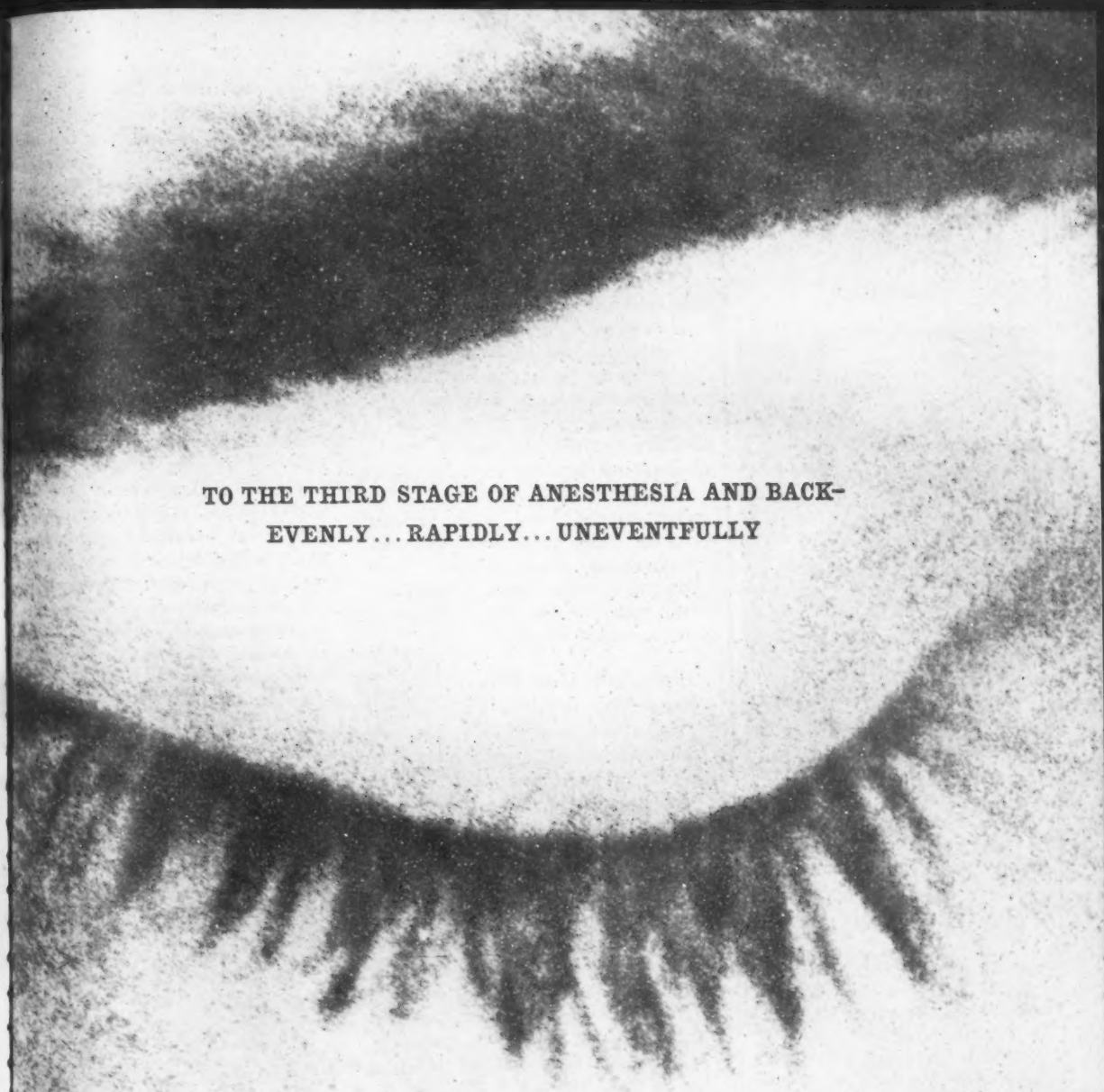
Unsterile supplies, such as trays, bandages, packs, needles, and syringes, are stored proximate to the general cleanup and disassembly station for easy insertion into the processing operation. Storage towers at the kit-assembly station are replenished on a daily basis with the various disposable and reusable materials necessary for the preparation of the various trays and kits. Linen storage is located proximate to the linen inspection and folding area. Sterile storage is located next to the distribution counter, where ward and unit deliveries originate.

Conclusion

With the increased cost of personnel and machinery, it has become increasingly important for the hospital to get the highest possible return out of its central supply room investment. The work-station principle attempts to reduce waste of time, money, and effort by increasing the over-all efficiency of the central supply room operation. While the particular units illustrated here are not applicable in all installations, there are several adaptations of these work stations which make possible the use of this principle in hospitals of various sizes.

Fig. 4. Area for linen preparation.
Fig. 5. Solutions area.





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Of course it is! . . . What counts is heat penetration right down to the center of each pack The Diack Control was designed and is recommended for this purpose.

All Reputable Hospital Supply Dealers Sell Diacks

TIME-TRIED Diack Controls

Hum's the Word for Deep Concentration

Humans hum to soothe themselves mentally, according to a California psychiatrist. Peter Ostwald, M.D., of the University of California School of Medicine says that the humming is frequently prompted by one of two subconscious impulses; to achieve a back-to-the-breast association with mother, and its allied feeling of security (babies often hum at the breast), or to block out extraneous sounds when trying to concentrate.

The first impulse may be strictly emotional, but the second is thoroughly practical. According to Dr. Ostwald, the sound waves produced by humming effectively screen out bothersome noises because humming is a "purer" tone. When a person hums, he can blot out most of the sounds of speech.

High Jinks Look Silly, Keep You Healthy

It does you good to act crazy now and then, according to four doctors at the Atlanta Psychiatric Clinic. In fact, they insist, there are times in human experience when it is an indication of health to be unruly.

The doctors make it clear they do not mean insanity, psychosis, or gross misbehaving. What they mean is the kind of craziness which some folks view as silliness. For deeper satisfaction in living, they add, we want the capacity to be silly, to be humorous, to laugh at jokes, to "experience those aspects of ourselves that are not ordinarily experienced when we are responsibly doing our everyday jobs."

Thus they contend that it is healthy to occasionally toss away your inhibitions—in the proper circumstances, of course.

When your craziness is accepted, it becomes contagious; and the clown who is the life of the party stirs up life in other persons in his group.

Go ahead. Play leapfrog over that fire hydrant.

Replaced Organs, Condensed Sleep 2000 A.D. Prediction

A week's sleep condensed into 48 straight hours, suspended animation, and improvement of the species through mutation of genes are some of the predictions for 2000 A.D. made by writer Milton Golin, editor of *Medicine at Work*.

"Such words as cancer, polio, heart attack, arthritis and the common cold will be used as infrequently as diphtheria, typhoid fever, and smallpox enter today's language," he adds.

Mr. Golin further predicts that electronic computers will almost instantly figure out the changing characteristics of virus strains, and transmit electromagnetic impulses to correspondingly alter the structure of antiviral medicines stored throughout the country.

The 21st century will not be an unmixed blessing, however, according to the medical writer. Accidents will kill and maim more persons than ever before; a supercrowded world will give rise to new diseases striking in a manner unknown in the earlier wide-open spaces. The suicide rate will remain high, and alcoholism will exist in new and more resistant forms.

As in 1961, 1691, or 1169, some observers will attribute the rises of these latter illnesses variously to passion, money (or lack of it), and loneliness.

Up to the Eyeballs in Deep Freeze

The Rochester (N. Y.) Eye Bank and Research Society is building up a supply of corneas for transplanting, with no fear of spoilage, thanks to a new dry-freeze method of preservation.

The new technic eliminates the emergency quality of the corneal transplant operation. Formerly, the corneal material had to be used within 72 hours after being taken from the donor.

In the new preservation method, the removed cornea is first treated with an antibiotic to kill bacteria, then placed in a flask of sterile glycerine. The flask is put into a double-walled apparatus lined with alcohol and dry ice, and then attached to a vacuum pump. The vacuum vaporizes moisture and draws it out of the flask.

After about 24 hours, the flask can be removed, sealed off, and stored at room temperatures.

When preserved corneal material is needed, according to Anthony M. Guida, chief of the Rochester laboratory and one of the developers of the technic, the surgeon simply "rehydrates" the material.

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WR 109

PRODUCTS YOU CAN TRUST FROM PEOPLE YOU KNOW

shows STERILE after sterilizing

• "STERILE" IN POSITIVE BLACK SHOWS ONLY AFTER 15 MINUTES AT 250° F. IN AUTOCLAVE

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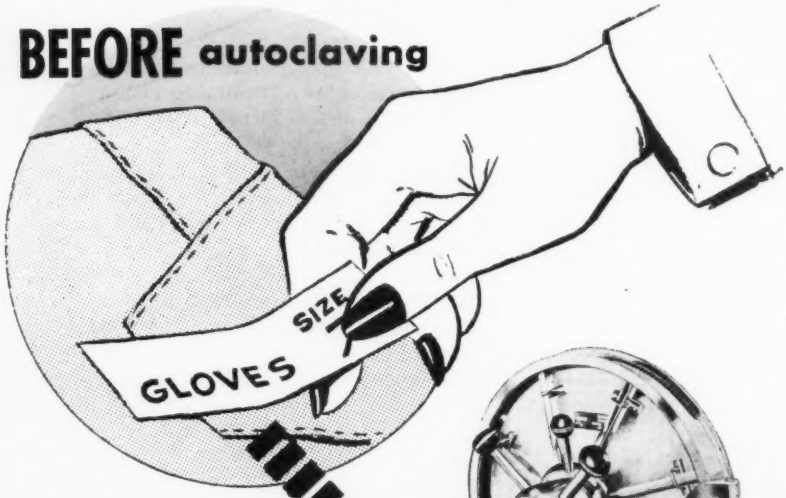
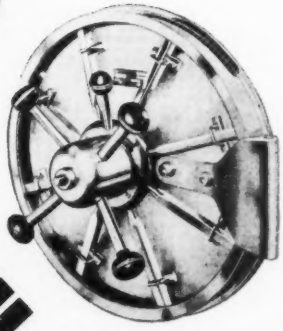


- Eliminates Guesswork
- Seals and Identifies
- Shows Size and Quantity
- Gives Proof of Sterilization
- No Pencil Mark Mistakes
- Sulphur-Free . . . Eliminates Ugly Stains



autoclaving

AFTER autoclaving

TSI

(TIME STERILE INDICATOR)

LABELS

Multiple dispensor — a compact unit to hold all sizes of gloves and/or any one of surgical pack.

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TIME SELF STICKING LABELS VINYL COATED

News Bulletins Enhance Working Relationships, Service and Prestige

By Paul G. Bjerke, R. Ph.*

The art of communication, oral and written, has been constructively exploited by big business for several decades. In the hospital field, which represents one of America's biggest "industries," the intrinsic and specific contributions of communications are just beginning to be recognized on a working basis.

One avenue of communication that can be used on an over-all hospital basis, or on a departmental basis, is the newsletter or bulletin. Since my function is pharmacy, I am dealing here with what such a publication can do for me and my department; but what it can do for pharmacy, it can also do for any department.

It can be an excellent medium for providing information for the general staff; a means of becoming closer to the medical staff, and bringing them closer to us. It can establish you and your department in the role of consultant, enhancing both your service and your prestige. It can be a profitable and interesting cooperative project which will accomplish these several objectives, and give an added fillip to working together on a change-of-pace effort.

Both the appearance and content of your bulletin have a share in the initial reception and sustained interest it will receive. Of the two, certainly content is of prime importance; so let us discuss content first and think secondly of physical and mechanical characteristics.

What the bulletin is designed to accomplish is your best guide as to its contents. You will doubtless discover, as we did, that our most difficult decision was not what to publish, but what to leave out. There is a wealth of material available which must be evaluated to screen out the provocative but trivial, so that the residue is meaningful and useful.

You may want to use the bulletin to inform the medical staff on one or more new drugs; to advise them on new antibiotics; to show a cost comparison between various brands of certain products; or to give the various brand names for a particular product. So much confusion exists among physicians over brand names that they greatly appreciate such a summary, as well as cost comparisons.

In a particular bulletin you may want to report to the medical staff, in writing, some action taken by the pharmacy committee. In the instances where formularies are used, additions to it are listed in the bulletin.

You may want to inform the medical staff of a new procedure started by your department. For example, we formerly filled orders for Coumadin with the daily dose ordered by the physician; we now have standardized on one size tablet, and each patient requiring the drug gets a given supply. Things that improve the service and simplify the ordering for physicians and nurses are especially appreciated by them.

Perhaps the pharmacist would like to tell the medical staff how the ordering of certain drugs affects the payments made by insurance companies. Perhaps the department has changed its methods of packaging prescriptions. Many times there is something in one of the professional journals that is of interest to the staff, and can be quoted or referred to as space permits.

(Continued on next page)

*Pharmacist, Luther Hospital, Eau Claire, Wis.

Luther Hospital

MEDICAL STAFF BULLETIN

EAU CLAIRE, WISCONSIN

No. 75 August 15, 1953

DEPARTMENT OF PHARMACY

VITAMINS

Many of the manufacturers of vitamins have added Vitamin B_{12} and folic acid to their products. This has created a problem in the eyes of many physicians because this material has been sufficient to mask macrocytic anemias.

We have, therefore, studied various formulas and upon recommendation of the Pharmacy Committee submit the following formulas:

THERAPEUTIC VITAMIN FORMULA

Vitamin A	25,000 U
Vitamin D	1,000 U
Vitamin B_1 (Thiamin)	10 Mg.
Vitamin B_2 (Riboflavin)	5 Mg.
Vitamin C (Ascorbic Acid)	150 Mg.
Niacinamide	150 Mg.

Each capsule contains 6 1/4 times the minimum adult daily requirement of Vitamin A, 2 1/2 times that of D and of B_2, 10 times that of B_1, 5 times that of C; the requirement of Niacinamide has not yet been established.

MULTIPLE VITAMIN CAPSULE

Vitamin A	10,000 U
Vitamin D	1,000 U
Vitamin B_1 (Thiamin)	5 Mg.
Vitamin B_2 (Riboflavin)	3 Mg.
Vitamin B_6 (Pyridoxine)	1 Mg.
Vitamin C (Ascorbic Acid)	100 Mg.
Calcium Pantothenate	5 Mg.
Niacinamide	25 Mg.

Each capsule contains 2 1/4 times the minimum adult daily requirement of Vitamins A and D, 5 times that of B_1, 1 1/2 times that of B_2, 3 1/3 times that of C; the requirement for niacinamide has not yet been determined. The need for B_6 and for Calcium Pantothenate has not been established.

Through large quantity purchases we are able to save the patient about fifty per cent of the regular cost on these formulas.

Many of the department of pharmacy releases, such as the one reproduced above, are concerned with pharmaceutical products. Most helpful to the medical staff, according to the author of this article, are those devoted to new drugs, with clarification of brand names and cost comparisons.

Luther Hospital

TEMPLE 2-6611 | 310 CHESTNUT STREET • EAU CLAIRE, WISCONSIN

MEDICAL STAFF BULLETIN

DEPARTMENT OF PHARMACY

September 13, 1960

No. 126

RE: CHANGE IN PHARMACY PROCEDURES

The Pharmacy Committee has recommended the following changes for improved service to the patient. These changes as discussed at the Medical Staff Meeting will be in effect September 14, 1960:

1. A representative group of drugs used over the last six months will be prepackaged and available in the emergency room for emergency room patients when the pharmacy is not open. They will be supplied on your orders by the Intern or Physician. A list of these drugs will be posted in the emergency room.
2. Only patients who are registered in the emergency room and seen by the Physician or Intern will be supplied medication.
3. If a patient is discharged after the pharmacy is closed, the patient may return the following day and the medication will be provided, or the patient may obtain the medication at the drug store.

Dr. A. J. Klein, Chairman
Dr. J. B. Dibble
Dr. G. E. Wahl

A more recent bulletin, above, shows the current printed head, smaller and more professional-looking than the original type. This one is typical of another important function of the news bulletin—to inform medical staff members of new procedures and packaging in the pharmacy deparment.

The length of the newsletter should be predetermined. If you choose to limit yourself to one page it may sometimes be necessary to condense material. Two or three pages might be more effective, especially if you plan to list additions to the formulary.

Frequency of publication is another consideration. One school of thought feels that regular releases are most effective, whether on a bi-weekly or monthly basis. These proponents feel that the physician will be looking forward to the bulletin at the same time, and thus it will be better read. On the other hand, some people prefer to release their bulletins as news arises, rather than at regular intervals. Their feeling is that they will then be sending only the most important news, and the physician will recognize it as an important directive. Both lines of thought have their merit; the final choice is up to the individual department.

It may be desirable in your hospital to combine the release with several other departments. That is, have news from other departments in your bulletin. In the event that nursing distributes a release, perhaps something could regularly be included from the pharmacy department.

Our objective at Luther Hospital in issuing a pharmacy bulletin is to present to the entire medical staff information concerning new drugs or procedures. Before issuing our bulletin, certain basic ideas on its presentation were discussed. We decided that the bulletins would be informative but brief. They would, for the most part, deal with one particular problem, or one or two new products. The physician would be able to tell at a glance if he were interested. If it presented a problem with which he was especially concerned, and the release did not give him sufficient information, he would come to the pharmacy for more detailed information. With this inducement in mind, we encourage the return of the physician by never being too busy to investigate a problem no matter how much time it consumes.

We decided that the bulletins would not be issued at any regular interval, but only when there was something of special interest to communicate. Our objective, of course, was to make each bulletin valuable to the physician instead of flooding him with inconsequential releases.

Our first bulletin was issued in the form of a letter on May 27, 1942. It informed the medical staff of a vitamin B complex elixir we were manufacturing. In 1943, we released a bulletin on the procedure to obtain penicillin which was then being controlled by the National Research Council. This subject, as you know, was of tremendous interest.

The type of bulletin was changed in November, 1945, with a printed letterhead reading Luther Hospital Medical Staff Bulletin, Eau Claire, Wisconsin. The introduction of this type of bulletin was a step to enlarge its scope to include other departments. The bulletin has been

(Continued on page 98)

Perry BLUE PENROSE Drainage Tubing

made of pure latex

new! *Radio opaque X-ray detectable* ***at no increase in price!***

INSIST ON *PERRY* BLUE RADIO OPAQUE PENROSE AND ELIMINATE GUESSWORK!

- New radio opaqueness clearly shows tubing in X-ray
- Smoothest texture
- Free from thin spots or bubbles

Eight sizes: 1/4, 5/16, 3/8 ,1/2, 5/8, 3/4, 7/8 and 1 inch.
Packed one dozen to a box.

36 INCH LENGTH
612
18 INCH LENGTH
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IMPORTANT... ✓ Check These NEW Perry Developments!

Perry COLOR BAND*

pure latex SURGEONS' GLOVES

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IMPORTANT-NEW MOLECULAR DISPLACEMENT
Surface Treatment

The Perry Rubber Company's Research and Development Laboratories have created the most important new advance in the reusable surgical field in recent years. ✓ This process, used on both inner and outer surfaces of the gloves, eliminates possibilities of tackiness. ✓ The molecular change in the surface of the glove does away with the need for powder in reprocessing, except for use as a lubricant in donning. ✓ This feature enhances the fine characteristics traditional in Perry's highly developed latex formulation. Meets the requirements of new hospital *trends* leading *away* from the use of powder in the operating room.

no powder needed in reprocessing

BETTER GRIP...WET OR DRY

RETAINS ALL TRADITIONAL ADVANTAGES OF PURE LATEX

• Longer Life • High Tensile Strength • Flexible Elasticity of Natural Latex • Greater Economy and Greater Strength

MORE USES • LOWER COST • GREATER ECONOMY!

white latex
412
brown latex
413

* The alternate to the Perry disPosable glove

W. A. BUSHMAN ASSOCIATES,
EXCLUSIVE SALES REPRESENTATIVES

Perry RUBBER COMPANY

(Continued from page 96)

used by administration as well as by the x-ray, laboratory, and dietetics departments. With the addition of a new physiotherapist, the department was given added emphasis through the use of the medical staff bulletin. When we publish a bulletin, Department of Pharmacy is printed below the general heading.

Through the years we have tried to present subjects that would be of interest and help to the medical staff and our patients.

We also had a nursing staff bulletin prepared by our superintendent of nurses. It was her policy not to include anything of a personal nature unless it represented some hospital activity. She used such items as disaster-tornado victims, national conventions, school of nursing notes, hospital notes, and information for interns and residents. It was printed on a tinted paper for extra eye-attention.

The nursing bulletin has since been replaced by "Intercom," a bulletin prepared by our administrative resident. A weekly bulletin published with minimum expense, its aim is to keep employees informed about the hospital, and includes a volunteer schedule as well as listings of all weekly meetings.

As to the appearance of your bulletin, this is a matter of personal preferences, facilities available and budget considerations. A printed heading is a low-cost item from a commercial printer, and adds to the attractiveness and professional appearance of the bulletin. Although it is not necessary for local use, I like the street address and phone number of the hospital included in the head for our occasional out-of-town mailings.

A single mimeographed sheet done in your own hospital will be the least expensive, of course. Costing slightly more will be the single mimeographed sheet with the printed heading we have just mentioned. The more expensive bulletins run to several pages, and some have covers.

It is important to keep the size uniform and to keep in mind some type of file in which it may be kept by the recipient. I believe it is wise to supply the physician with some type of inexpensive binder. If it is to be a loose-leaf type, the pages can be punched prior to distribution.

The best method of distribution is direct mail to each physician. It need not be sent first class, but can be sent under the hospital's mailing permit. Other methods of distribution, such as at medical staff meetings or in the doctor's lounge, may have advantages in the eyes of some but we feel that though they may be read, the chances are they will not be filed.

The importance of good communications in any organization cannot be over-emphasized. The staff will no doubt cooperate with any new procedures that will improve services, but there must be clear communications so that they are properly informed. It would be ideal if there were time to talk with each physician and explain each new item or new procedure; since this is a physical impossibility, a newsletter is not only an excellent alternate but possesses characteristics of its own to add stature to what we have to say.

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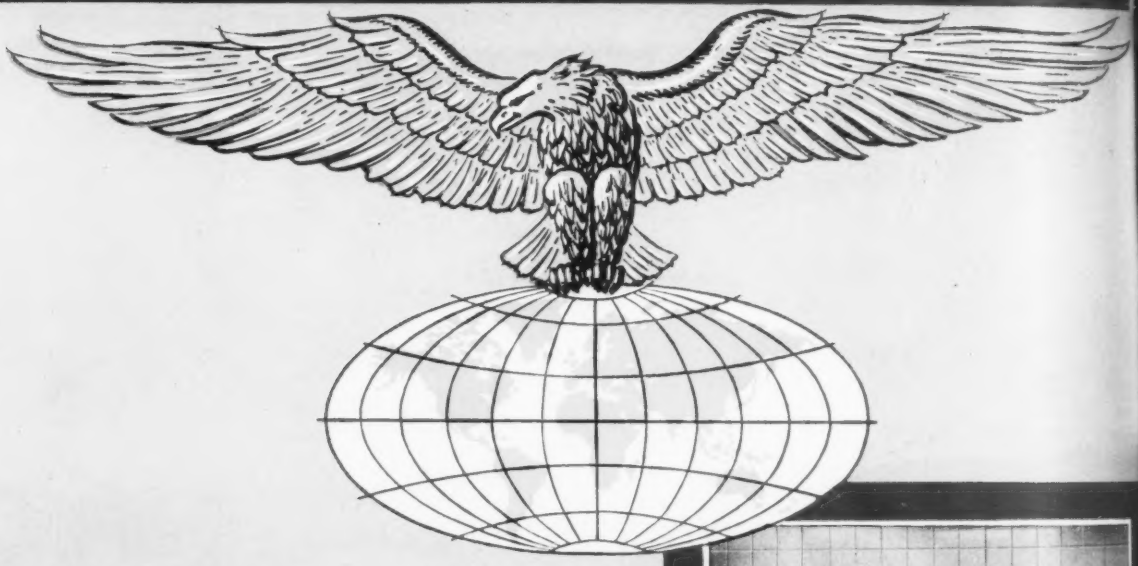

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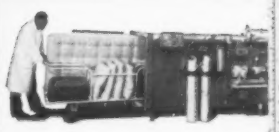

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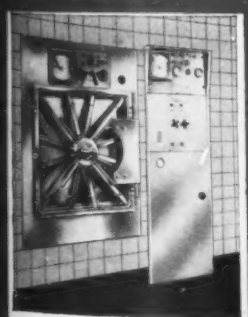

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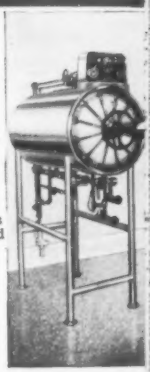

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Reported to possess a fairly broad anti-microbial spectrum, it has been successful clinically in the treatment of infections caused by pneumococci, staphylococci, and streptococci, and has been found effective against certain organisms, particularly staphyloccocci resistant to certain other antibiotics.

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Available in 10 cc. vials with diluent.

THE LAB

Accuracy and Error in the Lab

Part IX

Importance of Controls

By E. E. Myers, M.D.*

The importance of watching constantly for clerical errors, such as mistakes in the patient's name, was emphasized in the previous installment of this series. We would like to stress also that one particular clerical procedure—proper labeling—can be a very important factor in preventing error, by emphatically bringing to the attention of the person handling the bottle or specimen the name of the patient and the contents of the container.

In our blood bank, we have found that the most probable cause of the patient's getting the wrong type of blood is that the wrong bottle is given to the patient. This error is due to carelessness, which may consist of failing to read the label at all, misreading it, or failing to associate names.

We have observed four "near misses" in 10,000 transfusions, in which it was more or less "accidentally" discovered that the wrong blood was being administered to the patient. In an effort to avoid this type of error, we now place the patient's name on the bottle in four places (see Fig. 1). Another method —the two-person check—calls for two persons to sign a statement certifying that the label has been read and the correct bottle is given.

Controls—General

The use of "controls" forms a very important part in the over-all control of accuracy in the laboratory. The term "quality control," now popular, has a rather narrow meaning as borrowed from industry and as applied chiefly to chemistry. In industry the term refers to a system for checking quality of a product made on a mass or assembly-line basis. This term is not synonymous with control of accuracy in the clinical laboratory.

The two desiderata in laboratory work are speed *and* accuracy, and they can be obtained only by taking into consideration *all* factors in efficiency and accuracy. Chemistry is the department in which controls are usually emphasized, but every test done in the laboratory should be subjected to all applicable factors in accuracy.

In addition, there should be within every technic or procedure specific controls for the particular test, and these should be constantly reviewed and changed as it is possible to improve accuracy.

Fig. 1 Bottle of blood ready for patient has name written four times: on metal dust cap, in large letters across the top of the bottle, on the cross-match label, and on the band around the bottom of the bottle. The last one is put on upside down, so that it can be easily read when the bottle is turned to administer the blood. (Note attached ampule of Chlortrimeton with a syringe for nurse to use to put ampule contents in bottle at time of transfusion, to lessen possibility of allergic reaction.)

1. Standards

Standards are important in the control of accuracy and are especially useful in chemistry. They consist of known values. They can be made in one's own laboratory or obtained commercially. For several years the College of American Pathologists has been distributing the more common blood chemistry elements and compounds, and by so doing has filled a very important need, because reliable standards have been difficult to obtain.

Recently, standards have been improved, one of the best developed being Versatol, made by Warner-Chilcott Laboratories. Versatol has normal constituents, and its companion, Versatol-A Alternate, contains abnormal values. The main advantage of these standards is that most of the elements or compounds are gravimetrically added, so that the values are absolute and do not depend upon any test result. A new pediatric control is now available.

Standards from human sources should be used, since minor variations occur with animal sera and difficulties may arise in different technics.

Standards should be subjected to

(Continued on page 106)

*Director of clinical and research laboratories, The Myers Clinic and Broaddus Hospital, Philippi, W. Va.

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controls as well as the material being tested. A good procedure is to check standards frequently against each other. A general check on standards is the factor or calibration curve of the test after this has been established. When a new package is opened, it can be checked against the old standard. This method is called overlapping of standards. The same principle can be used in checking solutions, and the method is called control in overlapping solutions.

Standards should be near the unknown, since Beer's Law may not be applicable and other difficulties may arise if results in the patient are very far from the standard. Bracketing the unknown with high and low standards is an excellent procedure. This method is especially useful in flame photometry and pH determinations.

2. Normal Control

The normal control is useful for occasional checking, especially in blood chemistry. A blood specimen may be obtained from one of the laboratory personnel. Generally, it is better to use a person on whom the test has been done before and who has a known value.

The question always arises, who is normal? A single specimen must always be subject to question. The pooled specimen is better. It probably should contain a minimum number of 7 - 10 apparently normal specimens.

3. Positive and Negative Controls

Positive and negative controls should be done wherever feasible and for each determination or series of determinations. With each test there is a different problem. Positive and negative controls should *always* be done with each run of syphilis serology tests. The positive control may be pooled, or individual, known positive sera. It should be titered. It is better to use a weak as well as a strong positive control, so that slight variations in the test would be demonstrated.

Fig. 2 Photograph of ovary of a rabbit which showed many corpora hemorrhagica which remained essentially the same in appearance over several months during which the rabbit was isolated. This resulted in a false positive report.

In the Friedman test, one cannot be sure that the test is accurate unless one first opens the rabbit and inspects the ovaries. Then one injects the urine from the patient (specific gravity, amount and number of injections are important), reopens the rabbit in 48 hours and, if the ovaries are negative, reinjects it with known positive urine and reopens it again 48 hours later. This is the ideal, although somewhat impractical. In any important situation it is necessary to know that the rabbit can react.

The next best procedure is to use a rabbit which has given known negative and positive reactions. We have observed a rabbit which was persistently positive and which gave a false positive report because it was not inspected before the test.

In the test for occult blood the reagents should be prepared in the tube for the test. A reaction will occur if the tube contains any trace of blood. Then the specimen is added, and if this is negative, a small amount of blood on an applicator stick is used to show whether the reagents are reacting properly. The text could be said to be negative and positive control in time or series and is similar to the Friedman test.

The Gram stain is very temperamental, and one must be very careful to be certain that it is working properly. Seeing both gram-positive and gram-negative organisms in the smear is a good general indication that the stain is working.

The late Dr. C. Y. White used to have his bacteriologist place an emulsion of known gram-positive organisms and one of known gram-negative organisms on every slide preparation for study by the Gram stain, to be stained at the same time and the same way. Though this may seem to be extreme attention to one factor, it illustrates the importance of constant attention to detail.

Fig. 3 This diagram shows wax pencil marks placed upon a slide to check the Gram stain, as recommended by the late Dr. C. Y. White. The corner areas are used for known gram-positive and gram-negative organisms; the oval area is used for the unknown. Staining of all three areas is done at the same time and in the same manner, and all three are inspected under the microscope.

4. Statistical Control

Statistical control is the use of records, graphs, percentages, averages, and other statistical data showing the tendency for a series of tests or determination of a standard to have a high, low, or normal value. Reproducibility is actually the use of statistics, in that the determinations are considered around a standard or average value. This type of control is that used in quality control.

Statistical control may involve a number of tests covering a considerable period of time or tests run at any one time. For example, it has been noticed in our laboratory that during the increased temperature in the summer months the T3 (Triomet) tests are running higher. This test is presently under evaluation, and effects of temperature are just being observed. The temperature may affect the washing time or other aspects. Variations in Urograph tests were noted last summer, and steps were taken to correct temperature variation.

If the result is correct, it is considered that the test is done properly. However, it should be remembered that a person may get an isolated correct result through error. One may "start with impossible premises, reel like a drunken sailor and somehow stumble upon the truth." Statistical control may be of considerable value in a laboratory in which large numbers of procedures are done, but it is of little value in a small laboratory in which some procedures are done infrequently, and more attention must be paid to other methods of control.

Duplicate analysis may be considered a form of statistical control. This method is very useful for certain tests, especially when they are

(Continued on page 109)

Staphylococcal Phage Typing In the Hospital Laboratory

By John E. Blair, Ph.D.*

The problems of the epidemiology, prevention, and control of hospital-acquired staphylococcal infections often require the exact identification of the strains responsible for the infections. The cultural and biochemical properties which serve to identify the species may vary considerably from one strain to another and cannot be used to demonstrate either similarities or differences between cultures.

It is possible, however, to demonstrate with reasonable accuracy the identity or non-identity of individual cultures by means of bacteriophage typing. The method has proved a useful tool in the laboratory to identify strains responsible for hospital-acquired staphylococcal infections and to detect their presence in or their dissemination through the hospital population and the physical environment.

It is the purpose of this article to discuss the principles of phage typing of staphylococci and the practicability of the method in the hospital laboratory.

The technics of phage typing and the methods of preparation, titration, and maintenance of the phages have been described in several reports, among which are those by Williams and Rippon;[1] Bynoe, Elder and Comtois;[2] and Blair and Carr.[3] The procedures recommended by the International Committee on Phage Typing of Staphylococci, including test methods to ensure the suitability of the phages for typing, will appear in a statement now in press in the *Bulletin of the World Health Organization.*[4]

In principle, phage typing of the staphylococci is carried out by exposing cultures to a series of standard phages—each at its previously determined "routine test dilution" (RTD) on agar plates.

The surface of the agar is seeded from a young broth culture of the strain to be tested, the inoculum is permitted to dry, and the phages then are placed on the plate at suitably-spaced intervals. After incubation the phage susceptibility of the culture is shown by the presence of areas of lysis at the site of one or more phages.

While some strains are susceptible to only a single phage, the majority of typable strains are lysed by groups of two or more phages to produce "patterns" of lysis. Since each phage may enter into combination with several others to form these patterns, it becomes necessary to characterize the cultures in terms of their pattern reactions. The "phage type" of a culture is synonymous with its "phage pattern." Conclusions as to the identity or non-identity of individual cultures are drawn from a comparison of the phage patterns of the cultures.

In general, cultures which show identical or closely similar phage patterns are regarded as being probably identical or closely related; strains are considered to be quite unrelated when their phage patterns are distinctly different. Only coagulase-positive cultures of staphylococci should be submitted to phage typing; coagulase-negative staphylococci are not susceptible to the standard typing phages.

Twenty-one "basic" typing phages are recommended by the International Committee for routine typing. They are: *group I*—29, 52, 52A, 79, 80; *group II*—3A, 3B, 3C, 55, 71; *group III*—6, 7, 42E, 47, 53, 54, 75, 77; *group IV*—42D; *miscellaneous*—81, 187.

Additional phages may be used for typing when the individual laboratory feels that such phages provide useful information for the identification of a strain isolated in its local geographic area.

The validity of the results of phage typing depends upon the stability of the phage pattern. It has been demonstrated that the susceptibility of a strain to a given combination of phages is basically a stable property. Thus, the phage pattern of replicates of a given culture, or of several cultures of a single strain isolated from different sites in one individual, generally are identical or show only very minor variations at the most. Similarly, in an acute outbreak of staphylococcal infection of relatively short duration, cultures of the responsible strain from lesions or carriers also usually exhibit patterns that are identical or show only minor variations.

However, in a prolonged outbreak in which the responsible strain is being transmitted repeatedly between infected patients and carriers among the personnel over an extended period of time, there is the chance that greater variation around the basic pattern of the strain may occur; and these variations tend to increase with

*Head, department of bacteriology, laboratory division, Hospital for Joint Diseases, New York City.

the remoteness of the individual cultures from their presumed common origin.

While many cultures can be differentiated readily by simple inspection of their phage patterns, a difficult problem of interpretation sometimes is presented by the occurrence of variations in the patterns of presumably-related cultures. Facility in the determination of the probable identity or non-identity of cultures is acquired only by experience; certain criteria have been established as a guide to the interpretation of phage typing results. [1, 2, 3] The laboratory can be of greater assistance in the interpretation of results when it is provided with all pertinent epidemiologic information about the cultures to be examined.

The hospital's decision as to whether it should undertake to prepare and maintain its own stocks of phage and establish a phage-typing service depends upon a number of factors. In order to have an intelligent basis for comparison of results with those reported by other laboratories, it is highly desirable that all laboratories which undertake phage typing should employ those phages and procedures that have been found to be the most acceptable.

Of particular importance are the test methods by which the suitability of the phages for typing is determined, for it is only by careful performance of the control tests that the purity of the phages, and consequently the validity of typing results, can be assured.

Maintenance of the phages in a state suitable for typing requires constant vigilance to detect any undesirable trend toward mutation and to avoid contamination. The propagation of phages, their titration, and the detailed control tests, in addition to the actual determination of phage patterns, all add up to a rather time-consuming procedure which often cannot be fitted into the routine of many hospital laboratories.

The experience of many workers in the field suggests that, as applied to the hospital, the maintenance of phage stocks for typing should be confined to those institutions where adequate equipment, space, and trained personnel make the project feasible. Thus, for the most part the method is being used successfully in this country in a number of medical centers, university hospitals, and research institutions, and in certain reference laboratories.

In many hospitals it has been found impracticable to attempt to propagate and maintain the typing phages for routine use. For the convenience of such hospitals, the Staphylococcal Phage Typing Committee of the Laboratory Section, American Public Health Association, has been instrumental in establishing "regional laboratories" to which cultures of staphylococci may be submitted for typing. A list of the regional laboratories and the geographical area which each laboratory serves was published in 1959 in a statement by the Committee.[5]

When cultures are submitted to a reference laboratory for typing several facts should be kept in mind. Only pure cultures should be submitted; to send mixed or impure cultures only imposes an added burden on an already busy laboratory.

Only cultures of coagulase-positive staphylococci should be submitted for coagulase-negative strains are not susceptible to the typing phages.

Properly, cultures to be typed should be restricted to sets that are assumed to be related epidemiologically by reason of their source.

It must be remembered that phage typing is primarily an epidemiological tool; it is used to the best advantage to identify a strain responsible for an outbreak of infection and to determine the extent of dissemination of the strain within the hospital community. Many cultures isolated in the course of routine laboratory diagnosis in the hospital do not need to be phage typed. Nothing is to be gained by typing the random, single strain that is unrelated to other known infections. Knowledge of the phage type of a strain does not provide any guide to treatment of an infection.

It is conceivable that commercially-prepared typing phages which have been carefully controlled to meet certain standards of potency and host range may become available at some future time. While the use of such phages, (which would be supplied in lyophilized form) would free the laboratory of the need to maintain its own stocks, the laboratory nevertheless would be responsible for certain tests of the phages before they are used for typing.

In particular, it would be necessary for the purchaser to titrate each reconstituted phage against the specific strain used for its propagation, and use the phage for typing at the "test dilution" indicated by that titration. This is an important step which cannot be omitted. Experience suggests that the phages cannot be satisfactorily lyophilized in test dilutions ready for typing but must be prepared in more concentrated form and titrated before use.

It would thus be necessary for the purchaser of commercially-prepared phages also to purchase the specific propagating strains for the phages. Obviously the purchaser would be entitled to require from the manufacturer adequate evidence that the phages meet certain desirable standards of host range.[6]

In conclusion, it may be pointed out that the phage typing of staphylococci is a specialized laboratory procedure which, in its present stage of development, is not practicable in the average hospital laboratory.

Whether cultures are typed locally by the individual laboratory, or are submitted to a central laboratory, it would seem that the greatest benefit would be obtained by restricting typing to the examination of sets of cultures that are related to specific outbreaks of infection. This included identification of the responsible strain, its detection in carriers and in the environment, and the examination of such cultures as may be required for the evaluation of measures taken to prevent or control infection.

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CONTROLS

(Continued from page 106)

being set up, but twice the amount of materials and twice as much time are used, and altogether this method of control is generally inconvenient and impractical. More attention should be paid to other means of control and concentration placed upon getting a correct single determination.

The method of repetition of tests is similar to that of duplicate analysis, except that it requires more time. When an incorrect result is suspected the first thing to do is to repeat the test. For years it was the policy in our laboratory to repeat all positive syphilis serologic tests on the old specimen and also to ask for a new specimen. However, when this policy was reviewed some time ago, no one could remember when it had picked up an error. Consequently the policy has been discarded; but we still request a new specimen and repeat the test, which the author believes is a much preferred method.

Bone Cells Also Produce Cartilage, Fibrous Tissue

A research team at Columbia-Presbyterian Medical Center in New York, has found in a series of experiments that it is possible to grow fibrous tissue and cartilage as well as bone from bone cells.

The original research project, under the direction of C. Andrew L. Bassett, M.D., assistant professor of orthopedic surgery at Columbia University's College of Physicians and Surgeons, was to learn whether bone could be grown in the tissue culture in the laboratory.

Cells in these cultures were found to multiply under certain conditions in a rich oxygen atmosphere. Results, under an electron microscope, were indistinguishable from naturally grown bone.

The researchers subsequently discovered that by decreasing the oxygen, the cells multiplied into cartilage. By substituting tensions in place of restrictive pressure, the result was fibrous tissue of the type which constitutes ligaments and tendons.

The research may lead to a better control of bone growth and open a way to prevent abnormal bone development.

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The adult bed has 10″ conductive rubber tired casters—pediatric bed has 6″ casters, all with swivel locks and brakes. Adult bed has 6 I.V. rod receptacles, pediatric bed 2. Sleeping surface of adult bed 30″ x 78″, pediatric bed 30″ x 54″. Overall dimensions pediatric bed 35¼″ x 62¾″.

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For further information see postcard opposite page 142.

Eighty Percent Admissions To Accredited Hospitals

More than 80 per cent of all hospital admissions are to hospitals accredited by the Joint Commission of Hospitals, the American Hospital Association reports.

A special tabulation dealing with accredited hospitals is included for the first time in the 1961 Guide Issue of *Hospitals*.

The survey revealed that accredited hospitals account for 83.6 percent of all admissions; 85.7 percent of all hospital births; 61.7 percent of all beds; 60.5 percent of the average daily number of patients; 80.7 percent of all hospital employment; 81.8 percent of total expense for operation of all hospitals, and 78 percent of all hospital assets.

Admissions reported by the 6,876 listed hospitals rose to a record high of 25,027,152 in 1960, an increase of six percent over the 23,605,186 of 1959, according to information in the Guide Issue.

Since nonfederal short-term general hospitals account for the great majority of admissions (91.8 percent) the greatest part of the increase in admissions also occurred in these hospitals—up more than 1.3 million over 1959.

The average number of patients in all hospitals each day rose to 1,401,873 in 1960, compared with 1,363,217 in 1959. The average length of stay for nonfederal short-term general hospitals was 7.6 days, a slight decrease from the 7.8 days of 1959.

Total expense per patient day averaged $16.46 for all hospitals. The voluntary short-term hospitals led in costs—$33.23 per patient day—while the nonfederal psychiatric group had the lowest—$4.91 per patient day. Patients in nonfederal voluntary short term hospitals paid an average of $31.51 per day for their care, an average of $1.72 less than it cost the hospital to care for them.

There were more than a million and a half full-time workers in all listed hospitals, averaging 114 employees per 100 patients, an increase of two over 1959. For voluntary short term hospitals, the ratio was 232 employees per 100 patients, an increase of three over 1959.

Blood Donations Set Peacetime Record

Americans donated 2,442,700 pints of blood through the American Red Cross in 1960, setting a peacetime record for the ARC's blood program.

The first collection center outside the continental United States was also opened in Puerto Rico, with members of the Puerto Rico Medical Society as first donors.

Work-Systems Seminar Held

A hospital work systems seminar was held August 21-23, at Pere Marquette State Park, near Grafton, Ill., by the Medical Care Research Center, a joint project of Washington University and Jewish Hospital, St. Louis.

Philosophical and practical approaches to the study and design of hospital work systems through application of industrial engineering technics were discussed, according to Jay Goldman, M.D., coordinator and director of the Jewish Hospital industrial engineering department.

Speakers were: Faye G. Abdellah, Ph.D., assistant chief, research Grants Branch, and senior consultant, nursing research Division of Nursing U.S. Public Health Service; James D. Thompson, director, Ad-

(Continued on page 112)

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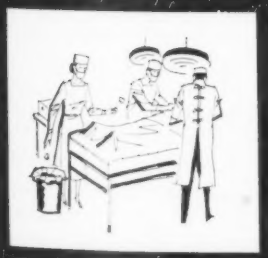

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WORK-SYSTEMS

(Continued from page 110)

ministrative Science Center, University of Pittsburgh; Ray Brown, superintendant, University of Chicago Clinics; Robert H. Roy, dean, School of Engineering, Johns Hopkins University; Allen Mogensen, management consultant, Lake Placid, N.Y.; David Littauer, M.D., executive director, Jewish Hospital, and co-chairman, Medical Care Research Center; Gerald Nadler, M.D., chairman, industrial engineering department, Washington University; Daniel Howland, director, Systems Research Group, Ohio State University; Albert F. Wesson, executive, Medical Care Research Center, and Dr. Goldman.

Electrode Therapy for Eyes Improved

A new type of liquid electrode has been developed for eye surgery, and experimental studies indicate the equipment may be effectively and safely applied to treatment of retinal detachment and certain types of glaucoma.

The instrument is composed of a glass tube containing saline solution and an electrolytically coated silver wire. Current is transmitted through the wire and solution to the tissue of the eye.

The primary advantage of the liquid electrode over the standard metal type is the optimum and uniform contact with eye tissue that is established and maintained.

This permits careful control of the electrical current and accurate measurement of the electrical properties of the treated tissue. The alterations in the treated tissue can then indicate the effectiveness.

Report Leukemia Progress With Oral Agent

Uracil mustard, an anti-tumor substance has been administered orally, and has produced regression of symptoms in 15 of 20 patients with chronic lymphatic leukemia. Use of the substance was reported by Drs. B. J. Kennedy and Athanasios Theologides, University of Minnesota Medical School, Minneapolis, in a recent issue of the New England Journal of Medicine.

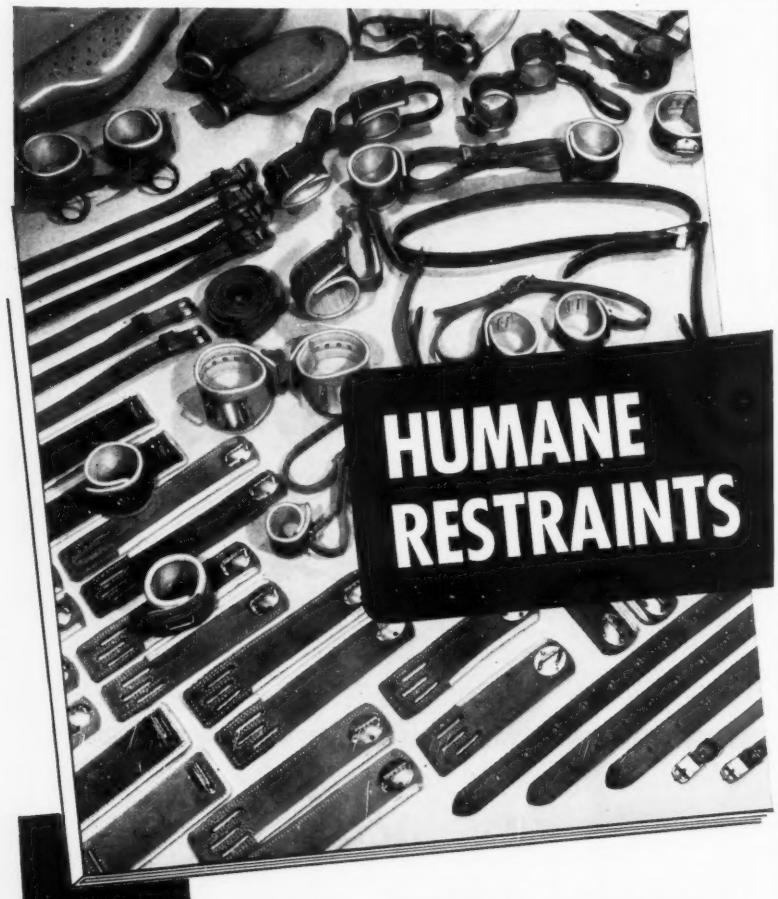
The doctors also reported that regression of symptoms was noted in 16 of 27 patients with malignant lymphoma.

New Mental Health Traineeship for R.N.s

The Mental Health Traineeship Program established under the National Mental Health Act of 1946 has been extended to include a limited number of undergraduate trainee stipends for graduates of diploma programs in nursing with a career interest in psychiatric nursing.

The traineeships are for full-time study to complete the senior year of a baccalaureate program in nursing which provides undergraduate education in all clinical areas including public health nursing. An essential criterion is that the applicant must be interested in continuing study in a graduate psychiatric-mental health nursing program.

Available in schools participating in the National Mental Health Training Program, the traineeships provide an annual stipend of $1,800 plus tuition and registration fees.



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For further information see postcard opposite page 142.

Need another pair of hands in your pharmacy?

IF YOUR HOSPITAL is as overcrowded and as overworked as 90% of the hospitals today, you certainly need extra help. What a good many hospital pharmacists and administrators do not know, however, is that they can get the extra pharmacy help without increasing their operating costs. As a matter of fact they can even save money while increasing efficiency.

● The McKESSON & ROBBINS Hospital Service Representative will gladly become your extra man. He is more than a salesman, he is a trained hospital pharmacy specialist who can give you professional assistance and advice on the many problems of hospital drug management.

Take your drug inventory for example. Large inventories eat up valuable time in ordering and maintaining stock levels and crowd your space, but, more importantly, they increase your carrying charges, tie up money and increase the risk of loss due to deterioration, damage and obsolescence. The McKesson & Robbins Hospital Service Rep can help you establish a smaller in-hospital inventory based on sound drug levels in keeping with your medical needs. He will also help you select drugs produced by reliable manufacturers to meet your demands—and then will maintain your stock levels for you. This means the money and time costs of procuring and carrying supplies will be held at a minimum. A real saving for you.

With 91 McKesson & Robbins warehousing units across the country, each with a Hospital Service Department, you have a local source of drug and sundry supplies that is actually an extension of your own storage space. You are only a telephone call away from any drug product you might need in emergencies, as well as for routine service. Inventory control is but one of the reasons why most of the nation's hospitals depend upon McKesson & Robbins for economical and efficient management of their pharmacies.

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For further information see postcard opposite page 142.

Book Corner

HOW TO GET THE MOST OUT OF MEDICAL & HOSPITAL BENEFIT PLANS—A PROGRAM FOR LABOR AND MANAGEMENT. ***Prepared for the Foundation on Employee Health, Medical Care, and Welfare, Inc., by Ruth and Edward Breacher. Prentice-Hall, Englewood Cliffs, N.J. 66 pp.***

Hospital administrators and others who must wrestle with the problems deposited on their doorstep as a result of the mushroom-like proliferation of health insurance plans can complain less this year than in years gone by of the paucity of informational material available to them. Hard on the heels of the Somers book (*Doctors, Patients & Health Insurance*, by Herman M. Somers and Anne R. Somers) comes this latest volume, somewhat differently oriented, but dealing largely with the same subject area.

Whereas the Somers books is a straight, scholarly examination of the subject for the general reader, the Breacher book, as its title indicates, concentrates on those aspects which are of direct concern to the trustees of employee plans providing for medical and hospital benefits. It is, in another sense, simply an elaboration of some of the deliberations undertaken and conclusions reached at a three-day conference (March 18-20, 1960) at Arden House, Harriman, New York, where 42 participants from management, labor, the medical profession, hospitals, prepayment plans, insurance companies, prepaid group-practice plans, and universities sought to come to grips with the major social and economic questions posed by their various responsibilities.

The major recommendation developed on the basis of the material presented in the volume is that labor-management community councils be created to help improve the quality of medical and hospital care and contain the rising costs of health insurance plans. Such a council, the authors suggest, could "depend more on its competence, its reasonableness, its understanding of the issues, and its tact in dealing with the other parties concerned than on the brute economic power it brings to the discussion room or the bargaining table." It is suggested that one of the main functions of such a council would be "to engage in lobbying or other political activities at the city hall, county seat or state capitol level, or even at the national level."

Among objectives specifically related to hospitals suggested for such a council are the following:

—Representation on hospital boards by both management and labor.

—Encouraging the seeking of full accreditation by greater numbers of hospitals.

—Increasing the opportunity for hospital staff affiliation by fully qualified physicians.

—Reducing unnecessary utilization.

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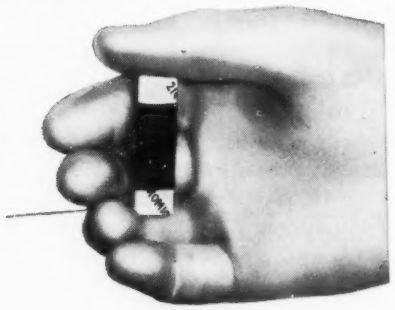

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SURGICAL SUTURES FOR EVERY OPERATIVE PROCEDURE
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—Encouragement of short-term psychiatric units in general hospitals.

—Seeking equitable standards of city and state payment for care to indigent patients.

—Fostering coordinated regional planning for hospital construction.

—Assuring establishment of depreciation reserves for replacement of facilities.

—Cultivating the development of progressive patient care procedures by hospitals.

—Review of the relative costs of salaried—as contrasted with percentage-basis remuneration—for radiologists, pathologists, anesthesiologists.

Objectives related to Blue Cross with which the proposed council might be concerned, according to the authors, include:

—Adequate and effective representation of management and labor on Blue Cross governing boards.

—Monitoring of elements comprising reimbursement formulas.

—Reimbursement policy toward non-accredited hospitals.

—Study of "insurogenic" hospitalization, unnecessary hospitalization, unnecessary use of ancillary services, unnecessarily prolonged hospitalization.

—Scope of benefits and standards of adequacy.

—Availability of outpatient diagnostic benefits as a means of minimizing insurogenic hospitalization.

—Availability of after-hospital care as a means of reducing patient stay.

—Reimbursement of general hospitals providing for short-term psychiatric care.

—Encouraging the inclusion of planning, study, statistics, and so on, as a necessary part of Blue Cross administrative activity.

Similar objectives are suggested also in relation to state and county medical societies, Blue Shield, insurance companies, insurance commissioners, plan beneficiaries and legislative bodies.

Carrying forward a program of activities on such a scale, the authors concede, "will place a further burden upon the management and labor trustees of employee benefit plans." The rewards, however, may be unexpectedly great, it is contended.

"The basic purpose of an employee benefit plan," the book concludes, "is to serve the health needs of employees and their dependents. By putting up dollars for this purpose, the plans are already accomplishing much. By contributing in addition time, interest, sound judgment, active support and—when necessary—indignant protest, the trustees of a plan should be able to increase to a notable extent the effectiveness of the dollars being spent."—*Gerald Blank, John G. Steinle & Associates, New York City.*

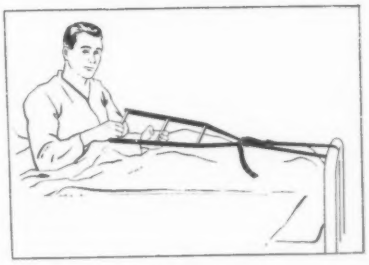
PRINCIPLES OF HOSPITAL ACCOUNTING, *by L. Vann Seawell. Chicago, Physicians Record Company, 1960.*

Current discussions of personnel problems in the accounting offices of hospitals—wherever controllers, office managers, or chief bookkeepers gather—will invariably revolve around the lack of adequately trained secondary staff. Here is a text specifically designed to meet this acute need. It is written for beginners who have little or no formal training in accounting. Many hospitals have found it necessary to engage personnel in this category and as a result the work performance is largely based on "rote" with constant review and teaching required from supervisory employees.

The text is well organized and the treatment of the subject matter is thorough. Twelve chapters are devoted to a comprehensive description of the accounting routines, the books of original entry, supporting ledgers, and work flow as such relate interdepartmentally. The last two chapters are concerned with the development of the reports concerned with the results of financial operations, i.e. Balance Sheet and Income and Expense Statements; together with a delineation on the use and interpretation of such statements. In addition the author presents a practice set of books to be used as a working guide for those in training.

Principles of Hospital Accounting should find ready acceptance in the business office of hospitals. It is a good textbook and students as well as practitioners will find much of value in its content.—*David H. Tarlow,* C.P.A.

For Patient Comfort



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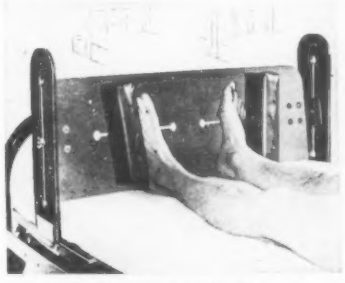

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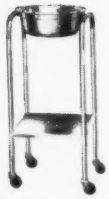

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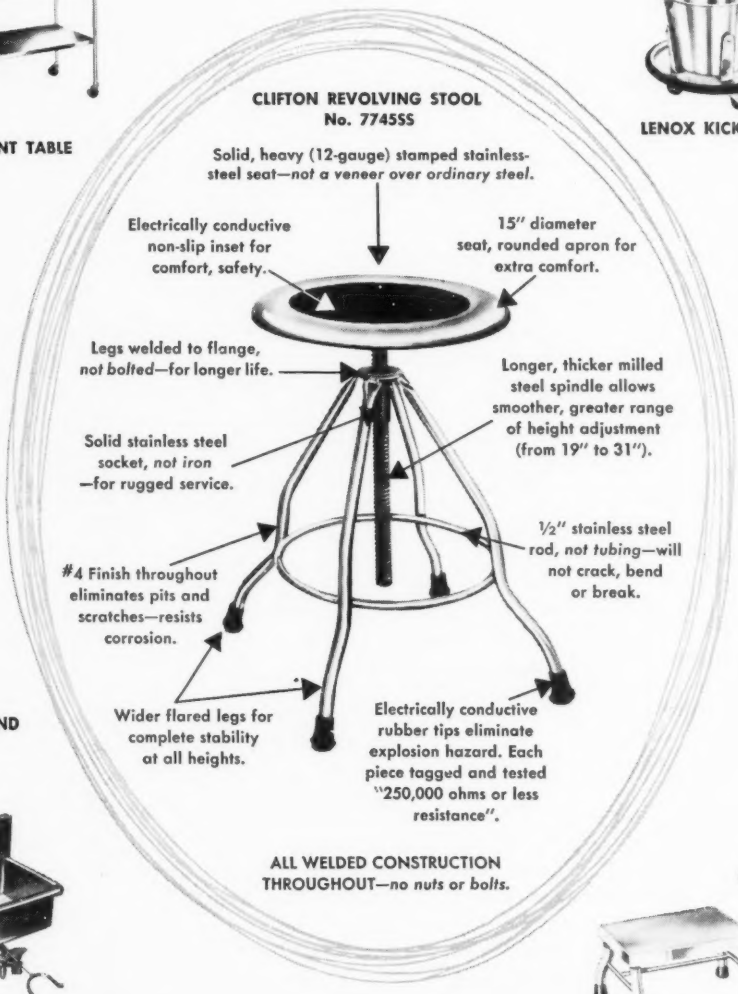
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HOSPITAL Topics **film review of the month**

No Margin for Error

Changes in the laws of many states now bring medical services within the hospital under closer legal scrutiny. Unless all members of the hospital staff are aware of their legal obligations, liability cases are likely to result.

Film on hospital medicolegal problems of great importance to the physician, nurse, and hospital administrator, candidly presents case histories which deal with major causes of in-hospital professional liability action, including: An initial mix-up in patient identification, a cross-match slip on a unit of blood which does not match the patient's wrist band identification, the loss of a sponge during surgery, an error in medication due to an illegible order or misunderstanding of an oral order which should have been written.

No Margin for Error points the way for active, thoughtful cooperation between medical and administrative staffs of the hospital in attempting to eliminate a large number of accidents caused by human error. The need for understanding and cooperation among members of a hospital staff is compounded by the large and transient population of today's complex hospital.

Black and white, sound, 30 minutes, 16 mm.

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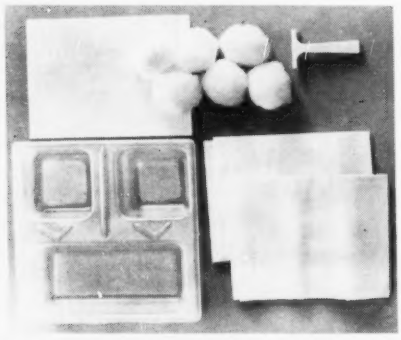
BUYER'S GUIDE

For further information on any of the products, please check the Buyer's Guide number on the reply card opposite page 142.

501. Comfort kit

New patient care item, the comfort kit, is a handy little cardboard carrying case, personalized with hospital name and picture, containing ten personal care items for use during hospital stay. Standard kit contains: One 4-oz. plastic squeeze bottle of Aren lotion; one 2-oz. can of Aren talcum; one box Kenwood kerchiefs; one disposable Kenwood wash cloth; one Aren disposable soap dish and bar of soap; tooth brush, tooth paste; manicure stick, emery board, comb. Kit is a guard against cross infection, as well as an excellent PR item and a practical aid to better patient care. Will Ross, Inc., 4285 N. Port Washington Rd., Milwaukee 12, Wis.



502. Disposable prep set

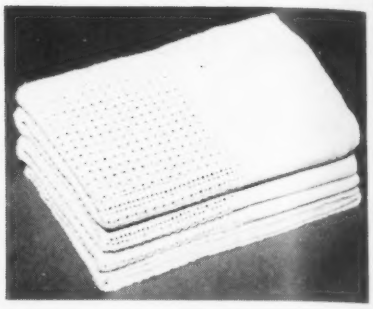
Disposable prep set reduces danger of cross-infection, eliminates time, labor expense of autoclaving hospital-prepared sets. Contains plastic razor with surgical blode, cotton balls, 2 absorbent towels, plastic-coated cover towel, and muli-cupped molded plastic tray. Ready for immediate use. Davol Rubber Co., Providence, R. I.

503. Vi-Drape

Vi-Drape surgical film is now available sterile, ready for use. New pre-sterilized sealed rolls are available in two sizes: 24x42″ and 24x18″. The plastic sheet, used to isolate patient's skin from surgical wound, is adhered to surgically prepared operative site with spray-on Vi-Hesive surgical adherant. Aeropolast Corp., Sta. A, Box 1, Dayton, O.

504. Minute books

Loose-leaf minute books for recording hospital meetings, are supplied with high quality ledger paper, have rectangular post binders which can be permanently sealed when desired. Physicians' Record Co., 3000 S. Ridgeland, Berwyn, Ill.



505. Thermal blanket

New 'honeycomb' weave in the Cottonblossom blanket isolates air cells, traps warmth with minimum weight. Cellular design retains thermal properties through many washings; can be boiled and sterilized. Absolute minimum shrinkage is assured by special pre-shrinking. Available in white, antique white, and five pastel colors. Southern Mills, Inc., 585 Wells St., S.W., Atlanta 3, Ga.

506. Blood-Pack

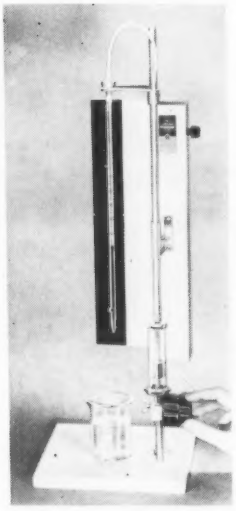
Fenwal 'segments' assure positive blood identification, materially reduce hazards connected with blood transfusions, according to a company release. Increased safety is made possible by indelibly printing pack identification number, at three inch intervals, along entire length of donor tube of each Blood-Pack. By sealing between numbers, technologists have a series of 11 pilot tubes. Each segment provides a sufficient quantity of air-free, sterile plasma and red cells to permit and tests required during 21-day storage period. Fenwal Laboratories, Morton Grove, Ill.

507. Meals-on-Wheels

New Electra II model mobile food cart provides most advanced system of delivering hot and cold foods to patient. Designed specifically for fast loading; especially functional in large hospitals. Trays arrive at end of line assembled as patient will see it, and ready for checking by dietitian. Side-by-side heated compartment trays match horizontally with corresponding patient tray in side-by-side cold compartment. "Tray-on-tray" concept makes it possible to quickly place hot food tray on cold food tray without delay or confusion. Model has more useable top space; ice cream freezer, utility shelf and drawer, and space-saving compressor within the unit. Meals-on-Wheels System, 5001 E. 59th, Kansas City 30, Mo.

508. Surgical pump

New Starline Super-60 series of surgical pump units incorporates major design improvements. Completely redesigned, compact, stainless-and-aluminum cabinets rouse quieter, cooler power and pump units, offer great convenience, facility to surgical team. All models feature exclusive, patented Mueller self-oiling system. Heavy-duty surgical models also have unique auxiliary facility for operating off central (wall) suction as well as the motor-driven pump. V. Mueller & Co., 320 S. Honore St., Chicago 12, Ill.



509. Pipetter

Rapid-Saf pipetter eliminates need and danger of using mouth to draw liquids into pipettes. Simple, fast, accurate, one-hand operation. Added feature is full-length, concealed incandescent tube which casts soft glow on back panel, makes titrant clearly visible. Labline, Inc., 3070 W. Grand Ave., Chicago 22.

510. Disposer

New Heavy duty 5 h.p. anl 7½ h.p. food waste disposers feature 'power surge' reversing and 'dual direction' grinding, as well as controlled water injection—features necessary for extra large requirements. National Rubber Mach. Co., 920 W. Lafayette Rd., Medina 3, O.

511. Oxygen mask

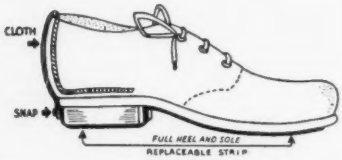
Hudson has announced a new improvement on their No. 7 disposable oxygen mask. Inlet tube now enters at neck of mask instead of at bottom of reservoir breathing bag. Thi inlet connection swivels to any position to facilitate use at either side of bed. Does away with twisting of tubing and sizzling caused when tube enters bottom of bag. Hudson Oxygen Therapy Sales Co., 2801 Hyperion Ave., Los Angeles 27, Calif.

512. Roof coating

New advancement in coatings chemistry has produced a roof treatment that both protects from ageing, deterioration and keeps building 15 degrees cooler in warm weather because it reflects heat. Called Superior "White Top", the coating is a white butyl rubber alkyd compound, which is suitable for application to built-up roofs, rolled roofing, asbestos and asphalt shingles, felt and tar roofs, cement and unglazed tile roofs. It is not recommended for gravel roofs. "White Top" is said to actually impregnate the roof, rather than simply covering it. Application is simple, can be done by regular building maintenance crew. Superior Paint & Varnish Corp., 3065 N. Rockwell St., Chicago 18, Ill.

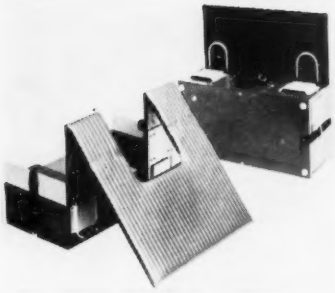
513. Drainage pump

New Gomco thermotic drainage pump is said to speed, simplify flushing and drainage technics. Featuring a compact, built-in flushing attachment, the No. 764 combination unit delivers 35 to 50 cc of water or saline solution at each stroke of the manually operated plunger. Drainage tubes are rinsed clean without use of hand syringes and without disconnecting drainage tubes from thermotic pump. Dependable, attention-free thermotic pump completes the flushing drainage cycle by gently, automatically withdrawing flushing solution. Gomco Surgical Manufacturing Corp., 828 E. Ferry St., Buffalo 11, N. Y.



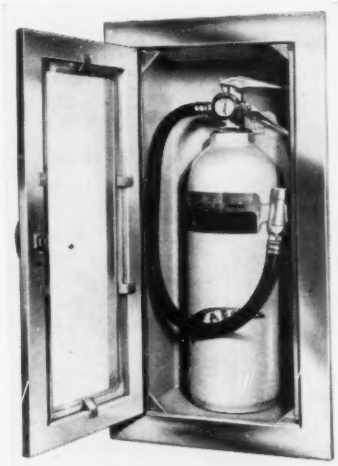
514. Conductive stickons

Adhesive heel and sole stickons fit all types of shoes, including wedgies, tennis shoes. Conductive silvercloth tailpiece fits inside shoe, allows maximum comfort and long wear. Designed for ease of application, permanently affixed to your own comfortable shoes. Heel and sole sections where wear takes place can be detached and replaced without additional cost. Built with high conductivity, will not easily become insulated by ordinary surface dirt. Available for full heel and sole (shown), and also with replaceable heel section only. Conductive Shoe Co., P. O. Box 437, West Hartford, Conn.



515. Proctological rest

Portable proctological rest offers all major advantages of full-size proctological table, plus portability, as aid in diagnostic and treatment technics, as well as for colonic irrigation procedures. Lightweight and compact, the unit is easily carried on calls or stored for ready use. Knee rests and leaning plate are fully padded. Opening in leaning plate permits placing of abdomen in open area to leave patient completely relaxed and comfortable. Sierra Engineering Co., R. A. Hawks Div., 123 E. Montecito, Sierra Madre, Calif.



516. Fire extinguisher

Triple-service Fyr-Fyter dry-chemical fire extinguisher, now available for built-in wall cabinet installation, greatly simplifies, speeds interior fire protection. The extinguisher is Underwriters' approved for combatting "all" classes of fires. The All-Purpose eliminates possibility of delay or error in extinguisher selection. It is sized for neat, uncrowded installation. Optional cabinet features inlcude: Steel, stainless steel or aluminum trim; choice of door styles. Custom installations are also available. The Fyr-Fyter Co., 221 Crane St., Dayton 1, O.

517. Air purifier

Portable room air purifier is said to combine in one system the three most effective principles for removing air contaminants. The new appliance uses electrostatic precipitation, germicidal foam and activated charcoal filtraion to clean air of odors, irritants. A fan with two-speed motor pulls 150 cu. ft. of air per minute through the unit. Fresh air is recirculated constantly through the top. Unit is said to effectively extract most impurities regardless of particle size. The light-weight portable appliance measures 14x14x14", is available in three color combinations. Particularly convenient for hospital use. Major Industries, Inc., 505 N. LaSalle St., Chicago 10, Ill.

518. Specimen bag

Disposable transparent polyethylene bags for lab and surgical specimens are available in nine sizes from 4x6" to 10x15". Chemical resistant plastic bags are designed as containers for agar plates, other culture media; lab and surgical specimens. Has good aging characteristics; may be heat sealed or closed with twist tie. Suggested as ideal container for freezing liquids. Klean Kan Bag Co., 64 E. 8th St., New York 3, N. Y.

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LATEX INFLATABLE BAG CATHETERS

Ready for instant use, the top-quality Acmix latex inflatable bag catheters are now available in **sterile packages** — for bulk purchase only. They eliminate all the time-and-labor-consuming processes of cleaning and autoclaving. Each doubly-wrapped catheter fully meets USP sterility standards and government specifications. Acmix quality construction is evidenced by satin-smooth surface, accurate size, symmetrical inflation, large lumen, high flow rate, and reinforced tip.

Packaged 12 to a box, and shipped in quantities of at least one gross, consisting of 12 separate boxes of desired sizes in multiples of 12. Economically priced for disposable use. For sizes and prices, see your dealer or write ACMI.

American Cystoscope Makers, Inc.

8 Pelham Parkway • Pelham Manor, Pelham, N. Y.

519. Vibrotest

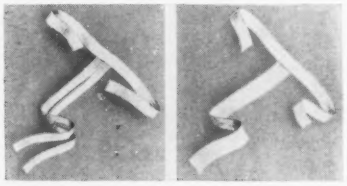
Model 269A Vibrotest has been developed to provide conductivity testing of operating room floors, equipment, personnel. All tests specified in National Fire Protection Bulletin can be accomplished readily by hospital personnel using this portable, self-powered instrument. Conductivity indicating meter gives direct indications when permissable conductivity is exceeded, without computations or reference to charts, tables. Associated Research, Inc., 3777 W. Belmont Ave., Chicago 18, Ill.

520. Sterilizer

New rectangular sterilizer has electrically-operated door, said to be a totally new concept in design. Eliminates hand wheels, unlocking bars. Door opens, closes, locks itself and initiates sterilization cycle at touch of a button. Door is sealed by uniform mechanical pressure independent of operator. Safety features insure proper operation, operator protection. Door can be operated manually in case of power failure. Wilmot Castle Co., 1949 E. Henrietta Rd., Rochester, N. Y.

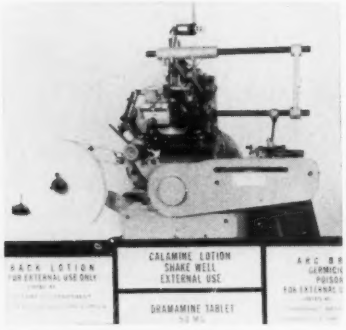
521. Detergent

Liqua-Clean is an "instant action" all-purpose liquid detergent for manual washing of heavily soiled dished, pots, pans, silverware. Also recommended for washing ranges, tables, walls and floors—ideally suited for institutional use. Requires no stirring or hot water for dissolving; effective in hard or soft water. Commercial Detergents Div., Calgon Co., Hagen Center, Pittsburgh 30, Pa.



522. Disposable T-binders

Disposable paper T-binders are constructed of two layers of 2-ply cellulose wadding with inner layers of nylon strand for strength. Tests show binders last up to 3 or 4 days in one-patient use, and binder is softer, more comfortable than cloth. Male and female styles available. Packed to withstand sterilization; may be autoclaved if desired. A. S. Aloe Co., 1831 Olive St., St. Louis 3, Mo.

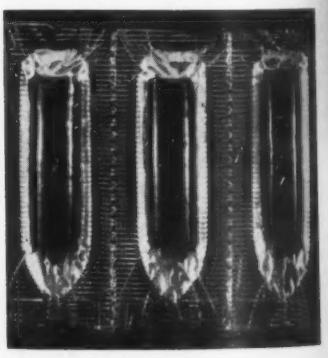


523. Label printer

Hospital pharmacies can make own labels for prepackaging standard medications on Markem 126 machine. Designed to produce labels where frequent legend changes are required, printer eliminates need for "outside" printing. Additional cost savings result from smaller inventories, elimination of waste from obsolete labels. Machine automatically feeds, prints label in one or two colors, cuts off and stacks, or rewinds. Counter shuts machine off when preset number of labels have been printed. Because of fast method of changing type inserts, all or part of imprint can be changed in seconds. Markem Machine Co., 182 Congress St., Keene, New Hamp.

524. Floor maintenance

Foam-Brite system of floor maintenance consists of special aerosol adapter which fits any standard floor polishing machine, and a specially formulated floor maintenance agent. Worker merely applies Foam-Brite as he is running floor polishing machine; spray dries immediately and polisher thus cleans floor and applies high-gloss wax in one operation. Foam-Brite is said to have excellent anti-slip properties, good water resistance. Universal Research Corp., 15 S. 21st St., Philadelphia 3, Pa.



525. Suppositories

Hospital pharmacists can now be relieved of the tedious and costly expense of formulating their own suppositories, while actually affecting savings for their departments, according to Reiss Williams Co. The company offers 86 different suppository formulations electronically wrapped in pure aluminum foil to guarantee positive protection, and guaranteed to meet highest requirements of the F.D.A. Reiss Williams Co., Jersey City 5, N. J.

Shopping the exhibits at the

38th ANNUAL CONFERENCE
AMERICAN PHYSICAL THERAPY ASSN.

Palmer House
Chicago
July 2 - 7

...n Medical Products Sales Co. showed its "Stand-Alone," which enables paralyzed or handicapped ...ts to achieve a standing position. Unit, which features low center of gravity and positive brake ..., is demonstrated for Martha Schmalenbeck, of the Scott and White Clinic, Temple, Tex., by ... A. Jean.

An educational extension of the conference meetings and panel discussions were the technical exhibits of leading manufacturers. Booths were crowded throughout the six-day conference with conventioneers eager for details and demonstrations of new and improved products.

...E. Eriksson, of The Burdick Corp., demonstrates one of the company's low-... faradic galvanic generators, part of their exhibit of diathermy equip-...s Ruth Thvedt, of Minneapolis.

...A. Preston Corporation's Preston Weight Caddy, for the storage of physical ... weights, is discussed by J. A. Preston and Leila Aanrud, West Allis, ...addy holds up to 360 lbs., rolls easily on ball-bearing casters.

4. Arthur Brown (l.), Plainfield, N. J., and Howard Trachtenberg (r.) Bayonne, N. J., inspect Rehabilitation Products' new Aquamatic K-pad, which provides automatically-controlled heat or cold to any part of the body. LeRoy Meyer, representing the firm, shows the vinyl unit.

5. Theratron's exhibit used visual aids to put across the story of its muscle stimulators. Theresa Burmeister, Florissant, Mo., and Elvera Guebert, Richmond Heights, Mo., listen while C. B. Meacham, of Theratron, stands ready to answer questions.

6. The Invalex Bath Chair Lift occupied the attention of Frank Baumgartner (c.) and Tim Hyna, of Toledo, O., while Derwyn Robb, representing Invalex, explains its workings. Seat lifts patient out of tub; mechanism has hand crank.

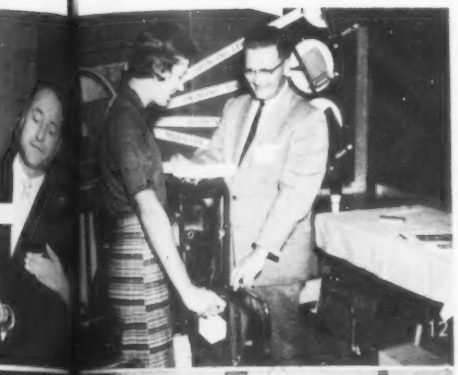
7. Scully-Walton Service, Inc., handles several lines of rehabilitation and physical therapy equipment. Eugene Palmer offers descriptive literature to Edna E. Farris, Long Beach, Calif.

8. Moist or dry heat or cold packs are made available instantly by the Medco-Sontator, shown by Medco Products Co., Inc. Carlos M. Parman (l.) Hinsdale, Ill., tests the cooling properties while Ken Huntsman of Medco aids the test.

9. LaBerne Manufacturing Co. displayed the new LaBerne hydraulic exercise unit which eliminates the need for weights. Sister M. Leona, St. Mary's Hospital, Racine, Wis., listens while Ray Hedden explains the table's controlled resistance action.

10. Artificial limbs featuring a total weight-bearing socket were featured at the J. E. Hanger, Inc. display. William Sobbe, of Hanger, explains to Sharon Mahon, Shriners Hospital, St. Louis, how the new socket relieves tension, aids walking.

11. E & J's display included their complete wheelchair line with adjustable footrests. Jim Bowden (l.) and Pete Pemberton (c.) of Everest and Jennings talk wheelchairs with a booth visitor.



12. A new adult folding walker interests **Doris Wickel,** Vernon, N. J., at the American Wheel Chair booth. Art Middendorf, representing AWC, discusses compactness, ease of operation, and stability.

13. The Hydrocollator neck contour pack gets a "test run" from Charles Prijals, Bridgeton, N. J. The pack, plus its terry cloth cover sling, replaces the multiple towel layers required for moist heat, and is less bulky. John Nebera, Parkersburg, Va., looks on as Jack Walker, Chattanooga Pharmacal Co., demonstrates.

14. The Tru-Trac flexion traction chair changes to five different angles, has perfect balance, and a foot lever release to free operator's hands for positioning. Helen Lindau is the "patient"; Tru Wilhelm of Tru-Eze Manufacturing Co., Inc., and Ruby Price of Laredo, Tex., look on.

15. The G5 electric massage unit, with its myriad applications, are discussed by Ruth Fleischman of Stanley Physical Therapy Equipment and Supply Co. and Monica B. Herzing, Evanston, Ill. The major unit has several interchangeable applicators for the extremities and other body parts.

16. H. E. Stansbury, Thermo-Electric Co., makes sure that James Zimmerman, of Lorain, O., reads all the good points in literature describing the Dickson Paraffin baths. New designs feature mahogany mouldings for patient comfort, and a new patented drain.

17. "Hertz rents almost anything," was the comment made by John F. Goss of Hertz to Minna Hildebrand, of the Crippled Children's Division, University of Illinois, Chicago. Hertz Rent All rents many types of physi.-therapy equipment.

18. Servette cart is subject of conversation at Colson Corp. booth. Questioning Don Weir (r.), of Colson, about its advantages is Robert Reed, State Welfare Home, Smyrna, Del. Cart has beveled recessed shelves and tubular frame.

19. Teca's Arthur Shapiro points out electronic impulses shown on the screen of one of the firm's electro-diagnosis devices. Al McDonald is "wired for sound" and the apparatus is electronically recording his nerve impulses. J. W. Maselter, of Chattanooga Pharmacal Co., is an interested observer.

20. The Glolite luminous infra-red lamps are available in sizes ranging from 450 watts to 1450 watts, and in several counterbalanced styles. Augusta Hadden, representative, points out the lamp's permanently-mounted generator features to Leonard Grace, Haverstraw, N. Y., and Karna M. Foss, Wilmington, Del.

21. The LaNair Universal Exercise Unit got a workout from (l. to r.) Lt. Carolyn T. Page, Randolph AFB, Tex., Lt. Marlene Moll, San Antonio, and Capt. Junie Coursey, Dayton, O. Firm also exhibited electrically operated adjustable steps.

22. The Zimmer Mfg. Co. display featured the Dykinga Head Halter, and Paul Remaley explains its use to Peggy Campbell, Akron (O.) City Hospital. Halter is constructed so that pressure is taken off patient's chin and transmits it evenly to both sides of jaw.

23. The LoBoy whirlpool bath was exhibited by the Whitehall Electro Medical Co., Inc. It is 24 inches high, and is particularly suitable for hydrotherapy in children. Peter Catanzara and Sal Zaita of Whitehall answer questions for C. A. Mitchell (l.), Janet Brown, both of Downsview, Ont., Canada.

24. The Elgin Exercise Chair offers progressive resistance exercises, and is particularly beneficial during early treatment of the hemiplegic patient. Ruth Ladue, Indianapolis, and Henry Kaines, Elgin, Ill., watch as Shirley Adams, Riley Hospital, Indianapolis, tries the chair.

25. The N-K portable rolling traction table top for pelvic or cervical traction was featured at the N-K Products Co., Inc., exhibit. James McKillip (l.), Van Nuys, Calif., and Royce P. Noland, N-K Products, discuss the fine points.

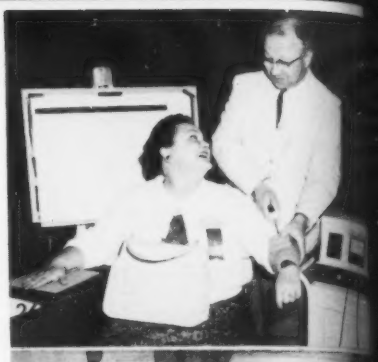
26. The DynaWave electrical unit was demonstrated for Marguerite C. Rukse, Man, W. Va., by Fred Hailslip, DynaWave Corp. Unit delivers undirectional, very short-duration electrical pulses, continuously adjustable from zero to 450 volts, without burn or discomfort.

27.The new 11le long and low whirlpool was featured at the 11le Electric Corp. booth. R. B. Eddy, company representative, shows George Hamilton, Girard, O., the tank, which is 66" long for adult horizontal leg treatment; 18" deep for ease in entering tank without aid of high chair —a necessity for injured and elderly patients.

28. Revised Franklin Hospital Bed was shown by The John Bunn Corp., featuring new footboard and attachments for easier handling of patients with continued automatic elevation and positioning. L. to r., Bill Sheppard, company representative; Georgia Locker, Mary Simington, and Jeanette Urben, all of Ann Arbor, Mich.

29. Variety of equipment featured at the exhibit of the Daniels Surgical & Medical Supplies,Inc., is pointed out by John Baron, company representative, to Sister Patricia, Mary Immaculate Hospital, Jamaica, N. Y., and Simon J. Dykstra, Holland, Mich.

30. Lumex, Inc., featured its geriatric chair at its exhibit. Chair, which has a matching table, is examined by Miriam Gressel (l.), Madison, Wis., and Mary Ann Joyce, Milwaukee, Wis. Tubular frame is chrome-plated one-inch steel; padded seat and back, with latter shaped to permit the use of a standard or small pillow.



Films, New Literature

530. Chemicals

A 24-page chemical order book has just been published by Central Scientific. Book contains an alphabetical listing of various chemicals, reagents, solutions, biological stains, culture media and indicators. Central Scientific Co., 1700 Irving Park Road, Chicago 13, Ill.

531. Hospital paints

Booklet describes psychological and functional values of using the right paint color for hospital rooms. From delivery rooms to staff meeting rooms, proper colors are recommended for walls, ceilings, floor and halls. Information on chemical resistant paints for lab tables is also available, as well as protective heavy duty paints for equipment, hand rails, interior and exterior masonry, many other surfaces. Tropical Paint Co., Cleveland 2, Ohio.

532. Acoustical panels

Bulletin C70 describes fire-resistive acoustic "Noishield" panels, designed for use as sound barriers and partial enclosures for noise control. Specifications, fire-resistive properties, various installations are included. Industrial Acoustics Co., Inc., 241 Jackson Ave., New York 54, N. Y.

533. Analytical instruments

New 28-page catalog contains specifications, operating data on seven key instruments for research, control. Text illustrates applications, provides details on many accessory pieces of equipment. Philips Electronic Instruments, 750 S. Fulton Ave., Mount Vernon, N. Y.

534. "Sound Zorber"

Illustrated catalog 980 covers the line of flexible, wire-reinforced rubber sound and vibration eliminators, especially designed to eliminate noise and vibration disturbance in pipelines on air-conditioning, heating and refrigeration systems. General Rubber Corp., 70 Summit St., Tenafly, N. J.

535. Supply systems

Bulk supply systems for gaseous and liquid oxygen, nitrogen and argon are described and illustrated in a 24-page booklet, N-155. Specifications, capacities and space requirements for NCG liquid converters are included. A section provides data on cylinder manifolds which are recommended for installation where gas volume is not large enough to warrant bulk supply unit. National Cylinder Gas Div., Chemetron Corp., 840 N. Michigan Ave., Chicago 11, Ill.

536. Food service

A 12-page, full color booklet, "Food Service Interiors—designed for today and tomorrow," details wide variety of services available, describes installations. Albert Pick Co., Inc., 2417 W. Roosevelt Rd., Chicago 8, Ill.

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. . . pound for pound, makes twice as much solution as other leading cleansers!

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Compare new SUPER EDISONITE with the cleanser you're now using. Mail coupon for free 3-oz. test package, sufficient for 12 gallons of solution.

MAIL THIS COUPON TODAY!

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Please send free 3-oz. package (makes 12 gallons) Test Sample of new SUPER EDISONITE for my personal evaluation.

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Address_____

City_____ Zone_____ State_____

Personally Speaking

William F. Balthaser—has been appointed director of information, Albert Einstein Medical Center, Philadelphia. Before joining the medical center, Mr. Balthaser was an account executive with a public relations firm and a foreign correspondent for NBC.

Henry S. Boyd—has accepted the position of administrator of the new County Hospital, Cleveland, Miss. He was administrator of Parkview Hospital in Dyersburg, Miss.

Gaetano Brindisi, M.D.—was recently appointed medical director, and **Anthony Alberico, M.D.**, was appointed director of medical education at St. Mary's Franciscan Hospital, Philadelphia, Pa.

Adrian Brodey, M.D.—has been named director of dermatology at Peninsula General Hospital, Rockaway, Queens, New York.

Max L. Brodney, M.D.—has accepted the post of chief of urology at Lewis E. Weiss Memorial Hospital, Chicago.

O. J. Carder, M.D.—has retired as administrator, Methodist Hospital, St. Joseph, Mo., after serving in that capacity for 36 years. **Warren S. Hinton** will succeed Dr. Carder.

Joseph R. Christian, M.D.—has been appointed full-time chairman of the department of pediatrics of Presbyterian-St. Luke's Hospital, Chicago.

Lawrence G. Christianson, M.D., assistant director for Medical Service, VA's Department of Medicine and Surgery,—has been appointed director of the VA's data processing staff. The staff will plan, develop and coordinate integrated automatic data processing applications involving medical and administrative activities for the department of Medicine and surgery on a VA-wide basis.

Mrs. Florence C. Connors, R.N.—has been placed in charge of personnel health service at St. Francis Hospital, Evanston, Ill.

Harry E. Davis—has been named assistant administrator at Flower Hospital, Toledo, Ohio. Mr. Davis formerly was administrative resident at Hillcrest Medical Center, Tulsa, Okla.

Robert L. Denholm—has been appointed chief of administrative services in the Colorado State Department of Institutions. He had been administrator of the University of Colorado Medical Center at Denver since 1957.

Wallace M. Dow—has been appointed as resident in hospital administration at University Hospital and Hillman Clinic in Birmingham, Ala.

James J. Duffy, M.D.—has been elected president of the medical staff and chairman of the executive committee on the newly opened Holy Family Hospital, Des Plaines, Ill.

Margarita M. Farrington—is the new assistant clinical professor of nursing at Boston University. Miss Farrington was formerly chief of nursing service at the Veteran's Administration Hospital in Boston.

Orville L. Ferrell—is new administrator of Memorial Hospital, Waycross, Ga. He was formerly administrator of the Cherokee County Memorial Hospital, Gaffney, S. C.

Harry S. Gear, M.D.—of South Africa, took office in July as secretary general of the World Medical Association.

Major Lavenia Hill—operating room nursing supervisor at Brooke General Hospital, Fort Sam Houston, Tex. retired from the Army in July at Brooke Army Medical Center.

Herman E. Hoche—has been elected president of Toastmasters International, world-wide speech organization. Mr. Hoche is a consultant with James A. Hamilton Associates, Minneapolis, and an instructor at

institutional control of bacterial enteritis and diarrhea

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effective—eradicates enteric pathogens

selective—does not eradicate the normal intestinal flora[1]

▪ Prompt, decisive bactericidal action ▪ Effective against an exceptionally broad range of enteric pathogens, including some now resistant to other antibacterials ▪ Well tolerated ▪ Does not encourage monilial or staphylococcal overgrowth ▪ Has not induced significant bacterial resistance ▪ Composition and dosage may be found in your PDR.

NEW hospital sizes for economy: Usual Discount Applies ▪ List Price

FUROXONE TABLETS bottle of 500* **$76.00**

FUROXONE LIQUID bottle of 16 fl.oz. **7.00**

1. Mintz, A.A.: Antibiot. Med. 7:481, 1960.

*Available on Direct Basis Only

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ALL-NYLON
SURGEON'S BRUSH

112 lifetime tufts anchored in non-corrosive nickel silver

Guaranteed 400 times—each Anchor All-Nylon Surgeon's Brush is guaranteed to withstand a minimum of 400 autoclavings

Tufts are soft but firm and especially tapered for better scrub-up efficacy with more comfort

Grooved handles assure firmer grip ...crimped bristles retain soap better

Satisfied users are one of your hospital's best assets. Why not please your surgeons by getting the best. Outstanding performance makes Anchor brushes the most economical on the market.

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the University of Minnesota program in hospital administration.

H. Elston Hooper—has been named chief of psychology research, Veterans Administration, Washington, D.C. He was formerly chief, central research laboratory, at the Augusta, Ga., VA hospital and clinical assistant professor, psychology, at the Medical College of Georgia.

Charles D. Jenkins—has been appointed administrator, Montgomery General Hospital, Olney, Md. He was formerly administrator, Whitesburg (Ky.) Memorial Hospital.

Peter Johnson—has been promoted from night administrator to the newly created post of assistant director of Michael Reese Hospital, Chicago, Ill.

Lawrence C. Kolb, M.D.—director of the New York State Psychiatric Institute, has been elected president of the medical board of Presbyterian Hospital, New York City.

Irving H. Leopold, M.D.—noted ophthalmologist, has been appointed medical and research director of Wills Eye Hospital, Philadelphia.

Maurice Levine, M.D.—medical director of Michael Reese Hospital and Medical Center since 1950, is retiring from the Chicago institution at the end of 1961. Dr. Levine plans an extensive trip to Israel and the Middle East.

John T. Mallams, M.D.—was elected president of the Dallas County chapter of the American Cancer Society, at their annual meeting. At the annual meeting of the Dallas Heart Association **Marion J. Greve, M.D.** was elected president.

William A. McLees—is the new assistant administrator at Indiana University Medical Center, Bloomington, Ind. Mr. McLees formerly was associated with the conference on rehabilitation Centers and Facilities, Inc., Evanston, Ill.

Frank Meisamer—has been promoted to administrator of Tennessee Tuberculosis Hospital in Chattanooga, Tenn., after completing his residency at that hospital.

Bernard J. Michela, M.D.—has accepted an appointment as chief of the department of rehabilitation and physical medicine, at the Veteran's Administration hospital, Long Beach, California. Dr. Michela was formerly director of the Rehabilitation Institute, Chicago, Ill.

Carl L. Mosher—has been appointed director, Presbyterian Hospital, Philadelphia. He succeeds Robert C. Millar.

Daniel E. O'Keefe, M.D.—former chief of the social service department of the Clinical Center at National Institute of Health at Bethesda, Md., is now chief of the new division of clinical work at Stanford University School of Medicine.

S. Jeffrey Pascal has resigned as University Hospital administrative assistant to become hospital representative in the hospital construction section of the state board of health in South Carolina.

Lonnie Lewis Pitts—was chosen Medical Technologist of the Year in Columbus, Ga., at Georgia's thirteenth annual convention. The award was given to Mr. Pitts for his outstanding work in behalf of the Central Presbyterian Baby Clinic, Atlanta, Ga.

Delbert L. Price—immediate past president of the Illinois Hospital Association, has resigned as administrator of Children's Hospital, Chicago. Mr. Price will move to Washington, D.C., to become vice-president of Gordon Friesen Associates, Inc., hospital consultants.

Doris Roberts, R.N.,—has left for a three-month special assignment with the World Health Organization Headquarters in Geneva, Switzerland. She has been detailed to prepare a "Guide for Staffing Public Health Nursing and Out-Patient Services" for publication. She will observe public health and out-patient services in a number of European countries. Miss Roberts ranks as a senior nurse officer in the regular commissioned corps of the Public Health Service, U.S. Department of Health, Education and Welfare.

Marion L. Rolph—has been promoted to major at First U.S. Army

Headquarters, Governors Island, New York City. She succeeds **Major Sarah W. Bunn,** as Army Nurse Corps counselor for the First U.S. Army area. Major Rolph was formerly operating and central material supervisor and educational coordinator, Fort Benjamin Harrison Army Hospital, Indianapolis, Ind. Major Bunn has been reassigned to Cleveland, O.

John F. Ruzic, M.D.—is the new director of medical education, Holy Cross Hospital, Chicago. He has been on the staff of the hospital since he received his M.D. from Loyola School of Medicine.

R. C. Salach, M.D.—has accepted an appointment to the faculty of the Chicago College of Osteopathy and to the staff of the Chicago Osteopathic Hospital. Dr. Salach will be head of the ear, nose and throat department.

Harold W. Salmon—has been appointed to represent the Illinois Hospital Association as liaison person with the Illinois Association of Medical Record Librarians. Mr. Salmon is also a member of the I.H.A. council on administrative practice.

Robert J. Shakno—is new evening administrator of Mount Sinai Hospital, Chicago. His administrative residency was served at the Veterans Administration Hospital in Houston, Texas.

Marvin G. Shepard, M.D.—has been named vice-president of the American Academy of Otolaryngology and Opthalmology.

Sister Elizabeth—presently administrator, St. Mary's Hospital, Evansville, Indiana, has been transferred to St. Paul Hospital, Dallas, Texas.

Sister Mary Michaleen, S.C.S—administrator, St. Joseph's Hospital of South Bend, Indiana, was elected director, American Association of Hospital Accountants.

Sister Theodore Marie—has returned to Sacred Heart Hospital, Eugene, Ore., as administrator. She held the same position from 1940 to 1955, at which time she was appointed provincial superior for western province of the Sisters of St. Joseph of Newark.

Thomas E. Starck—former assistant executive director of Little Company of Mary Hospital, Evergreen Park, has been appointed assistant administrator of St. Mary of Nazareth Hospital, Chicago, Ill. He succeeds **Joseph W. Davis,** who has been named assistant administrator of Holy Family Hospital, Des Plaines, Ill.

R. J. Weinzettel—has been named administrator of Memorial Hospital of Chatham County in Savannah, Ga. He succeeds **Daniel Gay** who will become executive director of the Hospital Council of Philadelphia.

Stephen K. Wilson—has been named administrator of the Cape Canaveral (Fla.) Hospital, now under construction. He was formerly administrator, Orange Memorial Hospital, Cocoa Beach, Fla.

John Q. Wimmer—has been named administrative assistant and night administrator, University Hospital

A new concept in handle *design*—a new concept in handle *material*—WEXTRAN! Here at last is a retractor handle that automatically provides a firm, comfortable grip—gives controlled pull without unnecessary muscle tension. And less tension means less fatigue. Assistants can now maintain a steady retractor position over longer periods of time.

New WEXTRAN is a highly durable material that is almost indestructible—will not crack or lose its shape under repeated autoclavings or dry heat sterilization. Because this new handle design eliminates all interior surfaces, these retractors are far easier to clean than old-style retractors with open handles. Retractor blades are made of famous Weck Stainless Steel.

Besides the Richardson and Bennett Tibia Retractors shown above, Deaver, Harrington, Kelly and Foss Gall Bladder Retractors now have new Wextran handles.

VISIT US AT BOOTH No. 472—AHA CONVENTION

and Hillman Clinic, Birmingham, Ala. At the same hospital, **Bona Parnell Langston** has been appointed administrative assistant for personnel and information.

Herbert D. Wolfe, Jr., M.D.—is new chief of the surgical department, Alexandria (Va.) Hospital. He is an instructor in urology at George Washington University School of Medicine.

Clarence E. Wonnacott, administrator of Dr. Wm. H. Groves Latter-day Saints Hospital, Salt Lake City, Utah,—has accepted an assignment as senior consultant in a hospital transfer program in Iran. **L. Brent Goates,** assistant administrator at the hospital, will serve as acting administrator during Mr. Wonnacott's six-month leave of absence.

NURSING APPOINTMENTS

Mrs. Edna Mae McIlveen, R.N.—has been appointed director of nursing of St. Luke's and Children's Medical Center, Philadelphia, Pa. Mrs. McIlveen, who has been night supervisor at the hospital for two years, succeeds Ann R. Grigos, R.N., who has resigned.

June Russo, R.N.—is the new director of nursing service at St. Francis Hospital, Evanston, Ill. Miss Russo replaces Agnes Moloney, R.N., who resigned to become assistant professor of nursing education at the University of New Mexico, Albuquerque.

NEW OFFICERS

Col. Warner F. Bowers, M.C., U.S. Army (ret.)—has been appointed assistant executive director of the International College of Surgeons, it was announced recently by Dr. Walter F. James, executive director of the College. Col. Bowers will assist in directing the College's sections throughout the world.

George M. Fister, M.D.—Ogden, Utah, was named president elect of the American Medical Association at its annual convention in New York City. Installed as president was **Leonard W. Larson, M.D.,** Bismarck, N. Dak.

Hiram E. Essex, M.D.—was recently elected president of the National Society for Medical Research, succeeding **Lester R. Dragstedt, M.D.** former professor and chairman of the department of surgery at the University of Chicago and currently associated with the University of Florida.

The Very Rev. Msgr. Clement G. Schindler—Illinois Hospital board member, has been installed as president of the Catholic Hospital Association.

Joseph Zem—of St. Luke's Hospital, San Francisco, was installed as president, Association of Western Hospitals, at the annual convention. Mr.

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PURO-CAP NIPPLE COVERS *for Terminal Sterilization*

Puro-Caps are a boon in one of the most hazardous areas in a hospital. Puro-Caps can be the key to greater efficiency and safety in hospital care of newborn-babies.

Wet-strength paper with waterproof seams for autoclaving Plain, or printed red or blue for identifying formula; approved non-toxic inks won't run or stain. Regular or large size — 1000 in wall dispenser that saves room, speeds handling, prevents waste.

OTHER PRO-TEX-MOR DISPOSABLES — *Paper and Glassine Sterilizer Bags for Syringes, Needles, Catheters, Gloves and Bed Pans • Pro-Tex-Wrap • Examination Table Sheeting • Flushable Bed Pan and Urinal Covers • X-Ray Storage Envelopes • Examination Gowns. Also plastic pillow and mattress covers and aprons.*

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Both Surgeon and Operating Room Supervisor are in complete agreement on stainless steel SteriSharps. SteriSharps will not rust, will not corrode, and will not become dull when autoclaved. They will take a sharper edge and will hold this edge longer than any other blade. SteriSharps are honed from an imported, high chrome-alloy Swedish steel of such hardness that they may be sharpened to a remarkable fineness. With years of leadership in razor blade and blade edges, A·S·R Products Corporation maintains the high standards responsible for SteriSharps, a surgical blade truly superior in modern operating room practice.

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Zem succeeds John H. Zenger, administrator, Utah Valley Hospital, Provo. **Paul R. Hoff,** administrator, Bannock Memorial Hospital, Pocatello, Idaho, was named president-elect. Other officers are: **Raymond F. Farwell,** administrator, Swedish Hospital, Seattle, **Sister M. Placida,** St. Joseph's Hospital, Phoenix, and **George Peel,** director, Lutheran Hospital, Los Angeles, all vice presidents; and **Harold Hixon,** administrator, University of California Hospital, San Francisco, treasurer.

Walter James McNerney—director of the bureau of Hospital Administration, University of Michigan School of Business Administration, has been named president of the National Blue Cross Association. Professor McNerney succeeds **James E. Stewart,** who is now chairman of the Association's board of governors.

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STERILE Vi-DRAPE® SURGICAL FILM

Just break special seal, extrude roll aseptically, remove plastic sheet from interleaf, and apply to patient.

Two sizes:
24" x 42" – Regular
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As the final step in pre-operative skin preparation, adhere sterile Vi-DRAPE Film firmly to the patient's skin with spray-on sterile Vi-Hesive® Adherant. This plastic bacterial barrier molds to all contours, seals off the skin, presenting a sterile operative site. Anatomic areas difficult to disinfect and previously considered impossible to drape aseptically are isolated. Vi-DRAPE Film is impervious to bacteria, feces, and fluids...permits extending incision or making second incision without re-prepping or re-draping...eliminates skin towels and towel clips.

Both the new STERILE Vi-DRAPE *Film and the original* NON-STERILE *package are now available through your surgical supply dealer.*

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Originators of aids for improved asepsis

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DEATHS

Edward C. Berger, M.D., osteopathic physician with the administrative department of the outpatient service of Osteopathic Hospital and Clinic, Le Roy Hospital, New York, N. Y. Dr. Berger was past president of the Osteopathic Society of the City of New York. During World War II he served in the Army in North Africa and Italy.—July 13.

Karl Freireich, M.D., medical director of the Central Flushing Medical Group of the Health Insurance Group of Greater New York. He was a member of the teaching staff of New York Medical College at the Queens Hospital Center, where he was an associate physician—July 10.

David B. Gershenfeld, M.D.—72; chief of obstetrical service, Beth Israel Hospital, Newark, N.J., died June 21. He was a past president of the hospital's medical staff, and had been a Newark physician for 47 years.

William Henry Meyer—81, a leader in the use of X-rays to treat superficial cancer, died June 14. Dr. Meyer joined the New York Post-Graduate Hospital, (now University Hospital) in 1914 and was made its director of radiology in 1916. Since his retirement in 1948, Dr. Meyer served as a consultant to University Hospital.

Francis Marion Pottenger, M.D.—91, leading authority on tuberculosis, died June 10. Dr. Pottenger was founder and head of Pottenger Sanatorium, Monrovia, Calif. He was also Emeritus Professor of Medicine, University of Southern California Medical School, and former president of the American College of Physicians.

Leroy Hendrick Sloan, M.D.—68, president of the American College of Physicians in 1953, died June 2. Dr. Sloan, formerly professor of medicine at the University of Illinois, had also taught at Rush Medical College.

John E. Griffiths, M.D., surgon of gynecology and obstetrics and a former president of the Main Line Medical Society, Philadelphia, Pa. —July 10.

One weak link may break the antibacterial chain around STAPH.

"The hands of all attending the sick may be the greatest hazard the patient encounters in the hospital."[1] *Proper,* frequent handwashing is essential to prevent infection. But "...*Staphylococcus aureus* appears to be completely resistant to soap."[2] Fortunately, pHisoHex with 3 per cent hexachlorophene is particularly effective against troublesome hospital staphylococci.

When pHisoHex was used for bathing babies and by nurses as a handwash, "Nursery nurses' hands failed to yield S. aureus in 100 samplings."[3] Bathing the baby with pHisoHex "...soon after birth and every other day thereafter is a most effective procedure in the control of infantile pyodermia."[4] In many hospitals regular use of pHisoHex has reduced the incidence of staphylococcal infection.[3-6]

Routine washing with pHisoHex is suggested for surgeons, physicians, nurses, nurses' aids, food handlers and members of the housekeeping and laundry staff. Additional use at home by surgeons and nurses will enhance results.

pHisoHex is available in convenient, unbreakable squeeze bottles of 5 fl. oz. and plastic bottles of 1 pint.

References: 1. Fell, E. H.: *Am. J. Surg.* 99:265, March, 1960. 2. Bettley, F. R.: *Brit. M.J.* 1.1675, June 4, 1960. 3. Hardyment, A. F.; Wilson, R. A.; Cockcroft, W., and Johnson, Betty: *Pediatrics* 25:907, May (Pt. II), 1960. 4. Editorial, *Canad. M.A.J.* 83:1112, Nov. 19, 1960. 5. Valentin, Hans: *Med. Welt* No. 2:121, Jan. 9, 1960. 6. Hill, A. M.; Butler, H. M., and Laver, J. A.: *M. J. Australia* 2:633, Oct. 31, 1959.

Winthrop LABORATORIES New York 18, N. Y.

For all personnel who come in contact with patients

pHisoHex®

antiseptic, nonirritating, hypoallergenic, nonalkaline detergent

Edward C. Dixon is shown getting a taste of his own medicine as he rests under a Continental-air Oxygen tent. Mr. Dixon, president and founder of Continental Hospital Supply, Inc., and Continental Hospital Industries, Inc., of Cleveland, designed the first automatic iceless oxygen unit 30 years ago. He was recovering from a minor ailment in St. Vincent's Charity Hospital in Cleveland.

TRADE TOPICS . . .

APHA, Bronfman Establish Public Health Prizes

The American Public Health Association, with a grant from the Samuel Bronfman Foundation, Inc., has established the annual Bronfman Prizes for Public Health Achievement, a new series of major awards to honor "outstanding current creative work leading directly to improved health for large numbers of people."

The Bronfman Prizes will be awarded for work of particular effectiveness in applying newer scientific knowledge to community health. Each prize will consist of a $5,000 cash award and a commemorative symbol; from one to three prizes will be given annually.

First awards will be announced and presented during APHA's 89th annual meeting in Detroit this fall.

AHSC Annual Report Wins Award

American Hospital Supply Corp. has received an award "for distinguished achievement in its annual financial reporting" from *Financial World*, weekly financial news magazine. The company's 1960 annual report to share owners was selected from among 5,000 entries in the magazine's annual report survey.

AHSC has also announced that George L. Heidkamp, administrative assistant, MacNeal Memorial Hospital, Berwyn, Ill., has won the 1961 Mary McGaw award for outstanding work in Northwestern University's hospital administration program. The award—a $200 honorarium and certificate—has been provided annually by Foster G. McGaw, founder and chairman of American Hospital Supply Corp.

And AHSC announces the appointment of George F. Snelgrove as advertising supervisor of the Hospital Supply Division. Mr. Snelgrove was formerly assistant director, ABC Affiliated Distributors, Inc.

New Appointments At Shampaine Industries

Kurt F. Vogt has been named director of marketing for Shampaine Industries, Inc. He has been in the hospital and professional equipment field since 1941 and has been associated with Acoustica Associates, Inc., and Ritter Company, Inc.

New district sales manager for Shampaine's institutional and professional division in the Chicago territory is Mason Dixon. Mr. Dixon formerly was contract sales manager, New Orleans division, A. S. Aloe Company.

Robert M. Bucholtz has been appointed customer services manager for the Carrem Games Division, Shampaine Industries, Inc.

Birtcher Acquires Geo. S. Thompson Corp.

Birtcher Corp. has announced the acquisition of the George S. Thompson Corp., Monterey Park, Calif., as part of Birtcher's diversification plan. George S. Thompson, president of Thompson Corp., will remain as president of the George S. Thompson Division of the Birtcher Corp.

Warner-Lambert Research Institute Appointment

Martin Winbury, M.D., has been appointed to the position of director of pharmacology in the Basic Sciences Division of Warner-Lambert Research Institute. Dr. Winbury, who is an authority on cardiovascular pharmacology, was formerly director of pharmacology and associate director of biological research at Schering Corp.

Cenco Acquires Mills Hospital Supply

Cenco Instruments Corp. has announced the acquisition of Mills Hospital Supply Co. of Chicago.

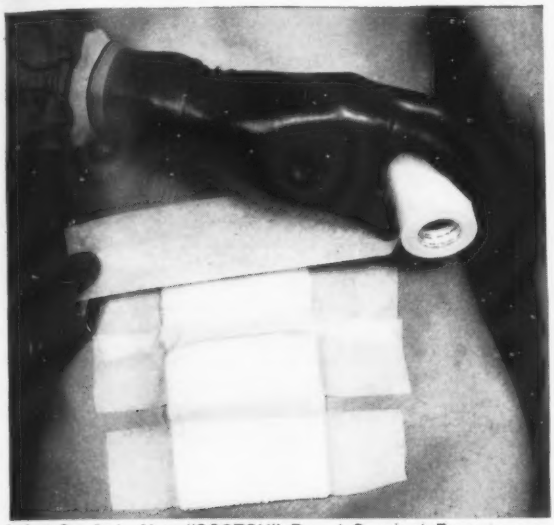
Present Mills management will continue to operate the company as a subsidiary. The acquisition will result in national and international distribution for the company.

Mills also announces the appointment of Leonard Fript as vice-president in charge of merchandising.

American Cyanamid Executive Changes

Henry Wendt, Jr., has been appointed director of advertising for American Cyanamid Co. Mr. Wendt was formerly general manager of Cyan-

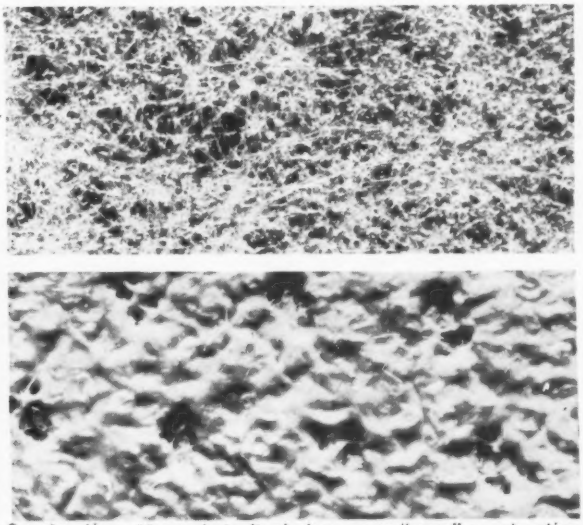
TOTALLY NEW SURGICAL ADHESIVE TAPE ANSWERS TRADITIONAL TAPE PROBLEMS



Patient Comfort. New "SCOTCH" Brand Surgical Tape is non-occlusive and physiologically inert. Prevents usual maceration . . . virtually eliminates chemical irritation, even in markedly tape-sensitive patients. It is cool, lightweight.[1]

Removal. Tissue-thin copolymer adhesive layer of "SCOTCH" Surgical Tape clings firmly to skin, yet does not entrap hairs. Tape comes off quickly and easily without depilation. Leaves no dirty residue for time-consuming "clean-up."[1]

Dressing Changes. Sticks fast, even in sitz bath or whirlpool. Fewer changes are required. Yet this tape tears with ease; does not tend to stick to rubber gloves or instruments.[1] There is no shelf deterioration, no "end-of-roll" waste.



Construction. Macrophoto (top) shows new "open" construction of "SCOTCH" Surgical Tape that allows free air passage through **microporous** backing and adhesive. Perforated tape (bottom) is almost totally occluded by thick, potentially irritating mass.[1]

"SCOTCH" Brand Surgical Tape is available through your surgical supply dealer in usual widths. ½ to 3 in., 10-yd. rolls.

REG. U.S. PAT. OFF.

SCOTCH BRAND SURGICAL TAPE MICROPOROUS

No. 530

Application. Unlike conventional adhesive tapes, "SCOTCH" Surgical Tape does not slip or "creep," and ordinarily should be laid on without tension. Where tension is desired or anticipated, shear stress on the skin may be prevented by cross strips of "SCOTCH" Surgical Tape at the ends of primary application.

MINNESOTA MINING AND MANUFACTURING COMPANY
...WHERE RESEARCH IS THE KEY TO TOMORROW

3M Company

1. Golden, T., A Non-Irritating, Multipurpose Surgical Adhesive Tape, Am. J. Surg. 100: 789,1960.

"SCOTCH" is a registered trademark of 3M Co.

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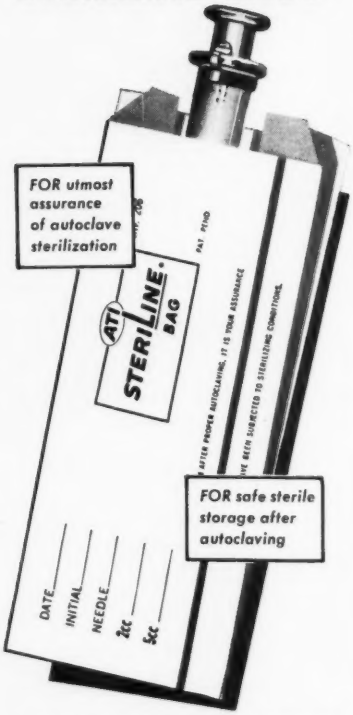

WILL AUTOCLAVING TRULY STERILIZE THIS SYRINGE?

When an ATI SteriLine Bag holds the syringe, you have utmost assurance of autoclave sterilization. The purple indicator on the bag turns fully green only after exposure to the precise combination of Time, Temperature and Steam necessary to produce sterility.

ATI SteriLine Bags meet U.S.P. indicator recommendations by verifying not only the attainment of the correct sterilization temperature, but also the duration of time at that temperature.

SEND FOR GENEROUS TEST SUPPLY TODAY— Accept this free offer of SteriLine Bags in all sizes, for syringes, catheters, small instruments, pipettes, needles, nipples, etc. Please give hospital address, your title, and write to Dept. HT-9.

ASSURED ATI STERILIZATION **Aseptic-Thermo Indicator Company**

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Manufacturers of Steam Clox and other Sterilization Aids.
Advertised in the Journal of A.M.A.

amid's Surgical Products Division. In his new post he will coordinate all divisional advertising. Cyanamid has also announced the appointment of Joel R. Brown, Jr., as general manager of the company's Surgical Products Division, whose executive offices have recently been moved from Cyanamid's New York headquarters to the division's main plant in Danbury, Conn.

News Briefs

Sam L. Say—has been elected vice-president of Don Baxter, Inc. He will head the Baxter-Pharmaseal domestic sales division.

* * *

James C. Jones—has joined Abbott Laboratories as a district hospital representative in the Chicago area.

* * *

Simmons Company—has announced the retirement of **L. J. Paxton**, contract manager for the central division. Mr. Paxton, who has been associated with Simmons since 1929 and has been a divisional manager since 1947, will also be retiring from his position as vice-president and treasurer, Hospital Industries' Association. **E. E. Ranahan,** Pacific division contract manager of Simmons, will succeed Mr. Paxton as manager of the central division, effective August 1. **T. J. Rooney** will take over as Pacific division manager.

* * *

John Coseo—formerly San Diego representative for V. Mueller & Co., has been named Chicago regional manager. He replaces **John R. Peters,** who has become manager, Star Surgical Instrument & Mfg. Co., manufacturing subsidiary of V. Mueller.

* * *

Howard W. McCall, Jr., first vice-president and director, Chemical Bank New York Trust Co.—has been named general chairman of the United Hospital Fund's 1961 campaign.

* * *

Richard A. Tarnowski and **Francis J. Clancy**—have been appointed assistant secretaries, DuBois Chemicals, Inc. Both are plant managers for the company—Mr. Tarnowski at East Rutherford, N. J., and Mr. Clancy at Los Angeles.

Luxo Lamp Corp.—announces the establishment of a Chicago office under the supervision of **John S. Sprenger,** full-time factory representative for Illinois, Wisconsin, and Indiana.

* * *

Jerome A. Johnson and **Leon Savage**—have been elected directors, Interstate Vending Co. Mr. Johnson is chairman, management policy committee, Interstate. Mr. Savage is president, Vendaway and Food-Crafts companies, wholly-owned subsidiaries of Interstate.

* * *

Leon E. Rogers—is new sales manager, Gilbert Hyde Chick Co. He will be headquartered in Oakland, Calif. With his appointment, Chick announces its severance from Zack Rogers Associates, Inc.

* * *

Harold D. Hauf, dean of the School of Architecture, Rensselaer Polytechnic Institute, Troy, N.Y., and formerly chairman, Department of architecture, Yale University—has been named vice-president in charge of design and planning, Charles Luckman Associates, planning-architecture-engineering firm. During World War II, Mr. Hauf was head of the hospital facilities division of the Navy.

* * *

Edmund C. Johnson, traveling sales representative for Hill-Rom Co., Inc., for 28 years—has relinquished the major part of his outside activities to assist in the direction of advertising and research for the company. He will be succeeded by **Robert Jones.**

* * *

American Laboratories, Inc.—has acquired the assets of Westside Hospital, a 90-bed facility in Los Angeles' Miracle Mile district, in exchange for 90,000 shares of stock.

* * *

Albert A. Ferrari—has been named hospital representative for the New York metropolitan district, Ames Co., Inc.

Electric Hotpack Co.—has established a subsidiary firm, **Hydro Therme Corp.**, for manufacturing and marketing of its standard laboratory and hospital heat-treating equipment.

* * *

Charles W. Pike—has been elected vice-president, operations, Merck Sharp & Dohme. He has been director of operations for the company.

* * *

Charles W. Roberts—has been appointed southwest district sales representative, Coleman Instruments, Inc. He had been a salesman for the A. S. Aloe Co.

* * *

Robert G. Ehret—has been named director of purchases, Appleton Electric Co. He formerly was purchasing agent for Appleton.

* * *

Mr. Asher

Thomas M. Asher—has been appointed director of scientific services, Hyland Laboratories division, Baxter Laboratories, Inc. He was formerly assistant director of research at Hyland. **G. Philip Lehrman** has been named manager of pharmaceutical development for Baxter. Before joining Baxter Dr. Lehrman had been with Central Pharmacal Co., American Cyanamid Co., and Mead Johnson & Co.

Mr. Lehrman

* * *

Coleman Instruments, Inc.,—has announced the appointments of **Roland M. Waters** to the new position of marketing director and **David L. Hackler** to advertising and sales promotion manager. Mr. Waters was formerly with Radiation Counter Laboratories, Inc.; Mr. Hackler formerly served Coleman as a technical writer.

* * *

Fred DeRango—has been named vice-president, sales, commercial food service equipment division, Waste King Corp.

* * *

Lester P. Riddle—has been appointed senior systems and procedures analyst, systems and procedures department, Appleton Electric Co.

* * *

Andrew W. Foster—has been promoted to sales manager, Washington, D.C. division of the A.S. Aloe Co., division of Brunswick Corp. He had been a sales representative in this area since 1949.

* * *

Robert J. Stone—has been named sales supervisor of the Chicago district, Becton, Dickinson and Company, replacing **George Gessner**, now manager of the company's government and contract sales for the western half of the country.

* * *

Excel Metal Cabinet Co.—has been purchased by the American Sterilizer Co. The Excel plant in Jamestown, N. Y., manufactures enameled and stainless steel casework and cabinets for hospitals and institutions. It will continue operations as a wholly owned Amsco subsidiary.

* * *

The Diversey Corp.—announces the appointment of **Maurice J. Kelley, Ph.D.**, as director of research laboratories. He was formerly director of project coordination and of industrial specialists laboratories, Nopco Chemical Co.

Appointed district manager of Diversey's southern Pacific division is

$2.94 A DAY OUTFITS A COMPLETE PHYSICAL MEDICINE DEPARTMENT IN YOUR HOSPITAL *including:*

Why wait for Capital Equipment Funds? Your hospital can have a completely equipped Physical Medicine department for just $2.94 a day... *paid for out of current operating* income. If and when funds are available you can exercise the *purchase option*. Write today for complete details.

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Please send me details on how I can lease equipment for a COMPLETE PHYSICAL MEDICINE DEPARTMENT for only $2.94 a day. Include lease prices on other equipment and sales terms.

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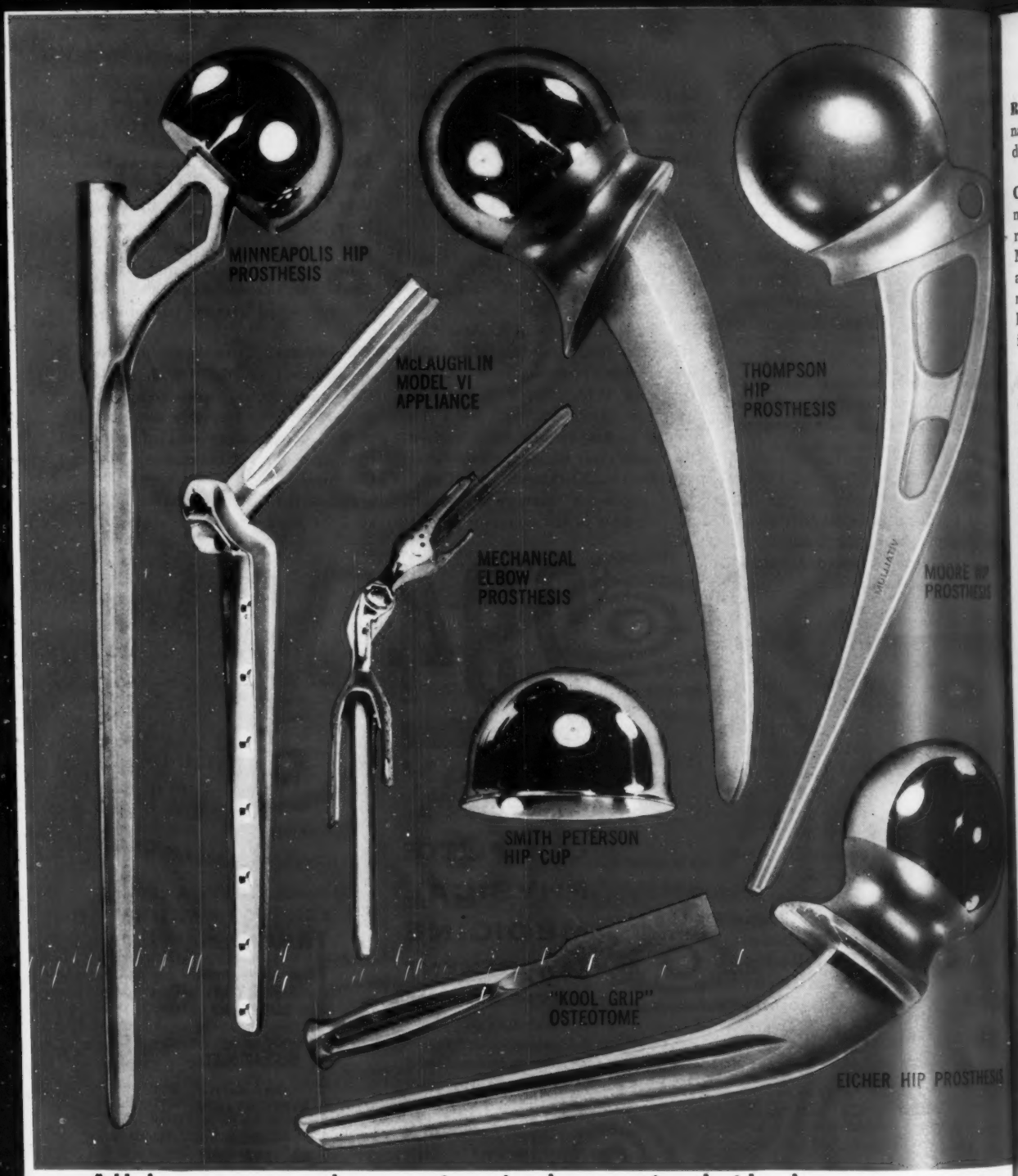

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No matter which type of hip prosthesis the surgeon may use in prosthetic arthroplasty, the name VITALLIUM on each gives assurance of trouble-free post-op performance. VITALLIUM appliances are clinically inert and non-electrolytic, thus offering optimum tissue compatibility. During 25 years of usage, involving over 9 million implants and hip prostheses, including a wide variety of internal fixation devices, **not one case of corrosion has been reported in the literature.** Watch for the name VITALLIUM! 25th year

AUSTENAL COMPANY Surgical Products 224 East 39th Street, New York 16, N. Y.
Division of Howe Sound Company

R. L. Cawley. P. H. Long has been named district manager, southern division.

* * *

Carl Swift Hallauer, board chairman, Bausch & Lomb Inc.,—was the recipient of the Scientific Apparatus Makers Association award presented at the association's annual dinner meeting recently. He was cited for his accomplishments in the scientific instrument industry.

* * *

Beckman Instruments, Inc.,—has consolidated its corporate and division advertising functions with a corporate marketing services group. **Robert E. Klees** has been named manager of the new unit. He was previously manager, advertising and sales promotion, for Beckman's scientific and process instruments division.

* * *

American Cyanamid Co., Surgical Products Division—has added five new salesmen to its staff. They are **Earl M. Bye** and **Sanford W. Harrison, Jr.,** midwest territories; **Thomas C. Cunningham,** north Chicago; **Patrick A. Groah,** Georgia and the Carolinas, and **George O. Sjodin,** the upper New England territory.

* * *

Emmett O. Brown has been appointed vice-president and manager of the A. S. Aloe Co. in Chicago, division of Brunswick Corp. Prior to his association with Aloe, Mr. Brown was a vice-president of American Hospital Supply Co. The Aloe Co. also announces the appointment of **Alfred C. Einstein** as sales manager of their newly opened New York offices. Mr. Einstein was formerly associated with Shampaine Industries, St. Louis.

* * *

Findlay C. Crowe, M.D.—has been appointed an associate medical director of Pfizer Laboratories. Dr. Crowe will be involved in such medical department activities as professional services to physicians, and medical aspects of product development and marketing.

* * *

Oliver K. Allen—has been appointed chief engineer of Dallons Laboratories, Inc., succeeding Carl Huber, who has been reassigned as chief of the Advanced Technology Division. Until the promotion, Allen had been manager of Corp.'s Instrument International Rectifier Laboratory. Dallons is a subsidiary of International Rectifier.

* * *

Charles Acuff—was recently elected vice-president of Klenzade Products, Inc. He had been manager of the Klenzade-New York, Inc. franchise branch for 10 years. Acuff will assist C.B. Shogren, president, in supervising Klenzade's International sales organization distribution facilities, and manufacturing operations.

Assuming Acuff's former duties will be **John McNeil,** formerly assistant manager of this branch.

Heart Association Names Lifetime Investigator

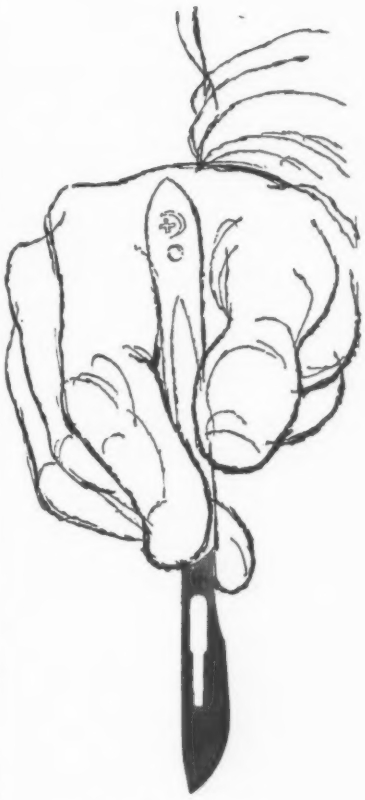
Carl W. Gottschalk, M. D., faculty member of the University of North Carolina School of Medicine, has been awarded the lifetime post of Career Investigator by the American Heart Association.

In receiving the award, Dr. Gottschalk becomes the eleventh medical scientist to be named by the association. The career investigatorship provides support throughout their professional lives to recipients of the award, who are enabled to pursue research of their own choice at any institution they wish, without requirements to publish, or time limitations on their projects.

Texas M.D. wins VA Award

The Physician's Award of 1960, given by the President's Committee on Employment of the Physically Handicapped, will go to a Texas doctor, Lee D. Cady, M. D., manager of the VA Hospital, Houston.

The award, given annually to the physician contributing most to the program encouraging employers to hire handicapped workers, will be presented to Dr. Cady at the annual banquet of the Congress of Industrial Health, AMA, at Denver in October.



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New Nerve Technic Devised by Student

A 16-year-old student scientist from Eau Gallie, Fla., reportedly has developed a new technic for keeping single nerve fibers alive and functioning in tissue culture for several weeks.

The project was displayed at the National Science Fair-International in Kansas City, Mo., by Christopher Cherniak, a junior at Melbroune (Fla.) High School. It won second award at the fair, as well as special first place awards from the AMA, the Army, the Air Force, and the Navy.

AMA to Inaugurate Drug Information Program

America's practising physicians will have available complete, accurate, up-to-the-minute data on all new drugs under a Drug Information Program to be inaugurated shortly by the American Medical Association.

Approved in final form late in May, the program will be implemented over a three-year period.

"The American physician already is the best-informed in the world regarding new drugs," said the AMA. "This new program will serve to add to his store of knowledge for the benefit of the patient."

A new book, the first volume of which is expected to be 18 months in preparation, will be published annually, and will include authoritative summary statements on drugs and their usage.

In another area relating to drugs, the AMA, the American Pharmaceutical Association, and the United States Pharmacopeia, will cooperate in an enlarged program of a drug standards laboratory to be located in Washington, D.C.

Physiologist Named to Lifetime Research Post

Earl H. Wood, M.D., 49, Mayo Clinic physiologist, became the AHA's tenth Career Investigator on July 1, tenth anniversary of this lifetime research category pioneered by the Association.

Dr. Wood is especially identified with research in dye dilution technics, in which photoelectric instruments record the changing concentration of a light-absorbing dye as it flows with the blood through the circulatory system. The technics are widely used as an aid in diagnosing circulatory defects.

Fatal Fungus Isolated from Soil Specimen

For the first, time, blastomyces dermatitis, a species of fungus causing chronic infection that may be fatal, has been isolated from soil.

The soil that yielded the positive specimen of the fungus (which was known as a soil habitant but had resisted all previous isolation efforts), was collected in a tobacco-stripping barn in Kentucky, in which a dog had died of blastomycosis two years ago.

The soil sample was examined by means of a new technic at the Medical College of Georgia in Augusta.

World's Most Powerful Microscope Installed

The most powerful electron microscope in the world has been installed at the University of Pittsburgh. The first of its kind in the U.S., the instrument will be used for research in the university's department of anatomy.

The Norelco EM-200 Electron Microscope, several of which are scheduled for delivery during coming months, provides direct magnification from 300X to 200,000X and with photo enlargement beyond 2,000,000X. The resolving power of the microscope is consistently below 10 Angstroms. Specimens may be observed visually on a large fluorescent screen or may be photographed on three-and-a-quarter-by four-inch plates.

Southern Farm Area Has Highest Chronic Rate

About 40.9 percent of persons in the U.S. had one or more chronic complaints between July 1, 1957 and June 30, 1959, according to the National Health Survey.

The percentage of persons with one or more such ailments range from 38.8 in rural non-farm areas in the South to 44.9 in urban areas of the West. The proportion of persons with limitation of activity due to chronic conditions was higher in rural-farm areas of the South than in any other region.

The number of restricted-activity days per year resulting from chronic conditions ranged from 15.8 per person in rural-non-farm areas in the Northeast to 23.7 in rural-farm areas of the South. Those areas also showed the widest variation in bed-disability days per year.

Any condition was considered chronic if the person had it for at least three months, or if it was on a list of 26 specific diseases, including heart disease, cancer, diabetes, mental illness, allergy, tuberculosis, chronic bronchitis, hypertension, and arthritis.

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Nurse Anesthetist—for 100 bed general hospital to complete staff of three. New modern air conditioned hospital located in Midwest University town. Salary open dependent on qualifications and experience. Write: Jack Edmundson, Administrator—Doctors Hospital—Carbondale, Illinois.

POSITION WANTED: Administrator with 20 years experience in all phases of hospital work including three major building programs. Fellow in the American College of Hospital Administrators. Available immediately. Write Box 100. c/o Hospital Topics.

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SUFFERING PATIENTS . . . hospitals across the nation have proved Aeropedic Mattress Pad, at only $49.50, can successfully be used to prevent or heal pressure sores, ease any long bed confinement. Helps arthritics, cardiacs, severe burn, fracture, or multiple sclerosis cases, paraplegics.

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. . . now *improved*, HALIMIDE disinfectant—**free from objectionable odor,** is a concentrate of low surface tension and excellent penetrating qualities. Perfect for inexpensive instrument disinfection, 1 oz. mixed with 1 gal. of water makes a stable—clear—non-corrosive—non-staining solution. TUBERCULOCIDAL when diluted with alcohol. No anti-rust tablets to add—no need for frequent changing.

B-P CHLOROPHENYL Disinfectant

. . . an ideal instrument disinfecting solution for professional office use. It is **rapid** in destruction of commonly encountered vegetative bacteria—free from phenol (carbolic acid) and mercurials—not injurious to skin or tissue. It is used full strength—has a pleasant odor—its germicidal efficiency is not affected by soap.

B-P FORMALDEHYDE GERMICIDE

. . . . **sporicidal · tuberculocidal · bactericidal · virucidal · fungicidal,** it is especially suitable for hospital use in the chemical disinfection of instruments and protection of surgical **sharps.** It is used full strength—and within 5 minutes will **kill** TUBERCLE BACILLI—vegetative pathogens and spore formers—the spores themselves within 3 hours.

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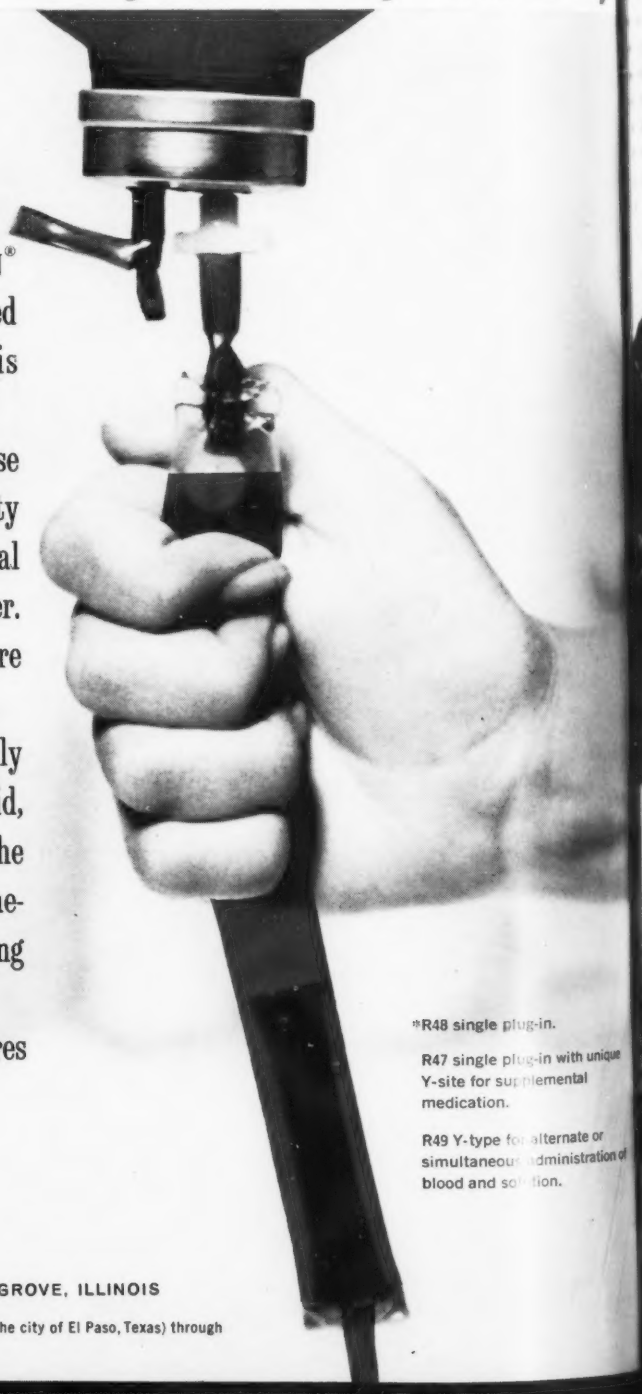

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